*Via FedEx and E-mail*

June 10, 2019

George B. Corcoran, Ph.D.
Department of Pharmacy & Health Science
Wayne State University
[redacted]

Re: *Imminent request to review draft regulation to roll back crucial protections from pesticides for farmworkers and their families*

Dear Dr. Corcoran:

We are writing to you in your role as a member of the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA") Scientific Advisory Panel ("SAP"). As you know, the FIFRA SAP is charged with "comment[ing] as to the impact on health and the environment" of drafts of proposed FIFRA rules.[1] You will soon be asked to review and comment on the impact of a draft rule rolling back the Application Exclusion Zones ("AEZ"), a provision of the Agricultural Worker Protection Standard ("WPS") that reduces the risk of continued exposures to workers and bystanders during pesticide applications. Exposure to drift during pesticide applications is a serious and common public health problem in agricultural communities. Many attempts to address the issue in the past have failed, at great cost to the short- and long-term health of farmworkers and communities that live, learn, work, play, and pray in areas adjacent to agricultural establishments where pesticides are sprayed. Weakening the AEZ could threaten the health and safety of tens of thousands of people around the country. We therefore respectfully request that the FIFRA SAP meaningfully review the draft AEZ rollback and provide the U.S. Environmental Protection Agency ("EPA") with your best assessment of how the proposed change could affect the health and well-being of farmworkers, their families and the communities surrounding agricultural establishments where pesticides are sprayed.[2]

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[1] 7 U.S.C. § 136w(d)(1).

[2] Some of us wrote to you in July 2018 because we thought that EPA would soon transmit to the SAP two draft rules that would have proposed revisions to crucial protections provided by the WPS, a regulation that provides vital protections from exposure to toxic pesticides for hired farmworkers, their families, and the general public in communities across the country, as well as for the environment. However, as you know, EPA never sent those draft rules to the SAP. Rather, Congress took up the matter, and earlier this year, it adopted the Pesticide Registration Improvement Extension Act of 2018 ("PRIA 4"), which *prohibits EPA from enacting two of the three proposed rollbacks* prior to October 1, 2021. Pesticide Registration Improvement Extension Act of 2018 Pub. L. No. 116-8, 133 Stat. 484 (Mar. 8, 2019), https://www.congress.gov/bill/116th-congress/senate-bill/483/text#toc-H8C99345290024FF3833B69749749D237. However, PRIA 4 does not prohibit EPA from seeking to roll back the AEZ.

Under FIFRA, the FIFRA SAP may have as little as 30 days to review the draft rule and provide input to EPA[3]; **it is therefore imperative that you and other members of the SAP be prepared to act quickly**. While FIFRA permits the SAP to waive its right to review draft pesticide regulations, **it is critical that the SAP not waive review of the draft rule**. If the FIFRA SAP waives review, EPA and the public will lose a key opportunity to obtain expert guidance on the potential health consequences of the draft rule.[4]

***In particular, we ask that you: 1) conduct a full review of the draft proposed rule; 2) add this matter to the agenda of one of the SAP's public meetings; and 3) issue written findings on your conclusions before your review period elapses.***

**What is the AEZ?**

In 2015, EPA updated the WPS to provide far stronger protections against pesticide exposure for farmworkers, their families, and rural communities. One of the key provisions established the concept of "Application Exclusion Zones" to reduce the risk of continued exposures to workers and bystanders during pesticide applications. An AEZ is a relatively small (25-100-foot) area around the pesticide application equipment where no one is permitted to be when a pesticide is being sprayed. If a pesticide applicator sees a person or group of people not involved in assisting with the pesticide application within this zone, he or she must suspend the application immediately and resume after the person[s] leaves the area. The AEZ provisions establish clear guidelines for applicators to prevent immediate harm. EPA's own analysis found that the AEZ requirement would reduce a significant portion of poisoning incidents while imposing only negligible costs on employers.[5]

**Why Analysis by the SAP Is Critical**

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[3] Under FIFRA, the SAP technically has 60 days for review. However, EPA is only obligated to respond to the comments and publish the comments and response in the Federal Register if the SAP provides comments to EPA within 30 days of receiving the draft rule. 7 U.S.C. § 136w(d)(1), referring to § 136w(a)(2)(A).

[4] We note that the EPA Science Advisory Board voted to review a series of controversial rules that EPA has recently proposed, including a plan that would limit the types of scientific research that EPA could use to justify environmental regulations, and proposals to strike down limits on greenhouse-gas emissions. *See* Sean Reilly, *Advisory Panel to Review "Secret Science" Plan*, E&E News (June 6, 2019), https://www.eenews.net/eenewspm/2019/06/06/stories/1060501795; Rebecca Beitsch, *The Battle Over Science Roils EPA*, The Hill (June 9, 2019), https://thehill.com/policy/energy-environment/447520-battle-over-science-roils-epa.

[5] *Pesticides; Agricultural Worker Protection Standard Revisions*, 80 Fed. Reg. 67,496, 67,524-5 (Nov. 2, 2015); Regulations.gov, *Economic Analysis of Agricultural Worker Protection Standard Revisions, September 2015 IN 2070-AJ22* at 88-89 (Sept. 2015), https://www.regulations.gov/document?D=EPA-HQ-OPP-2011-0184-2522 (follow "view document" hyperlink).

When adopting the AEZ in 2015, EPA's analysis showed that incidental spraying of workers who were in an area being treated with pesticides was one of the most common types of incidents resulting in pesticide exposure. Federal and state health agencies, worker advocacy organizations, and even the news media have reported hundreds of injuries each year resulting from careless pesticide applications and drift surrounding applications and equipment. EPA noted that requiring an AEZ filled a crucial gap because the rules then in place did not provide meaningful guidance on how applicators can prevent human exposure during applications. This is especially important because EPA does not account for workers or other bystanders being sprayed with pesticides when it conducts risk assessments to determine whether to register or re-register pesticides; rather, it assumes that these exposures do not happen.

By proposing to roll back the current AEZ protections, the Trump EPA has let it be known that it will take a different approach. To determine whether EPA's new approach provides sufficient protection against the risk of toxic exposure resulting from unintentional spraying in a pesticide treatment area, a data-driven scientific analysis of whether the AEZ is needed to avert harm is called for. The SAP brings special expertise in fields that are directly relevant to assessing the impacts of pesticide use and exposure on humans and the environment. It has long been the responsibility and practice of the SAP to advise EPA on the best ways to assess the impacts of proposed regulatory actions, such as this rulemaking, and to inform and advise the Agency when it has not adequately evaluated the impacts on the sources and types of data that would improve such assessments.

Eliminating the AEZ "suspend application" mandate, or limiting its scope, raises a scientific question: what impact would modifying this requirement have on the safety of the two and a half million farmworkers who labor in this country's fields and orchards, as well as communities surrounding these agricultural communities? The SAP should consider new information about pesticide spray drift. This new information includes a recent study measuring drift and assessing how best to protect workers from exposure. *See* Edward J. Kasner et al., *Spray Drift from a Conventional Axial Fan Airblast Sprayer in a Modern Orchard Work Environment*, 62 Annals of Work Exposures and Health (2018), attached hereto as Exhibit A.

In addition, we are aware that the California Department of Pesticide Regulation ("DPR") maintains an extensive searchable database of pesticide-related illness. *See* California Department of Pesticide Regulation, *California Pesticide Illness Query (CalPIQ)*, https://apps.cdpr.ca.gov/calpiq/ (last visited June 6, 2019). An analysis of reported spray drift incidents in that data base could provide valuable insights into what regulatory protections might have averted these incidents. For example, case numbers 1663-1743 from the DPR database involve 65 workers who were sickened by pesticide drift from two tractor airblasts and one aerial application of sulfur to a nearby field. The closest workers were only 30-50 feet from one of the tractor applications. Case numbers 1625-1646 from the DPR database involved fieldworkers who arrived at a vineyard to harvest grapes while pesticides were being applied to an adjacent field. The workers, 24 of whom became ill, were not informed of the ongoing application. Likewise, important information could be gleaned from careful review of a recent pesticide spray drift incident in Watsonville, California, which is too recent to be entered into the database, in which 24 employees were sickened after being contaminated with pesticides that drifted from an adjacent field. *See* Notice of Proposed Action from County of Santa Cruz Office of the

Agricultural Commissioner to Los Amigos Harvesting (June 1, 2018) (File No. 44171803) attached hereto as Exhibit B; Notice of Proposed Action from County of Santa Cruz Office of the Agricultural Commissioner to FMG Farm Contractor, Inc. (June 1, 2018) (File No. 44171804) attached hereto as Exhibit C; Department of Pesticide Regulation Enforcement Branch, *State of California Pesticide Episode Investigation Report* (June 29, 2017) attached hereto as Exhibit D.[6] These incidents could provide important information about standards needed to prevent such incidents in the future. If the SAP concludes, after considering new information about pesticide spray drift, that the AEZ should be strengthened, it would be consistent with the SAP's mandate to share that information with EPA and the public.

While these incidents provide important insights that bear further analysis, it is important to be aware that, unlike California, many states, including many agricultural states, do not have a comprehensive searchable database of pesticide health-related illness incidents, and specific agriculture related pesticide exposure incidents are not always so identified or characterized. Moreover, to the extent any state maintains such a database, it only contains information on incidents of pesticide exposure that are reported. However, such incidents are vastly under-reported, for multiple reasons, not the least of which are: 1) the fear of retaliation that most farmworkers and rural communities have should they report such incidents; and 2) the lack of training and knowledge by health care providers of the signs and symptoms and the reporting requirements of pesticide-related illness. See Geoffrey M. Calvert et al., *Acute Pesticide Poisoning Among Agricultural Workers in the United States, 1998 – 2005*, 51 Am. Journal of Indus. Med. 883, 894-95 (2008) (discussing reasons why agricultural workers are deterred from seeking health care and why health care professionals misdiagnose acute pesticide poisonings).

We also encourage the SAP to examine EPA's analyses supporting the proposed changes to the AEZ to see whether the Agency has considered and appropriately used all available scientific information concerning the quantification of the benefits of the rulemaking — such as studies on the problem of underreporting of pesticide incidents. Pesticide exposure and pesticide-related illness is a public health issue with economic and social consequences that are not always quantified, but which do have an impact, not only on individuals and families, but on communities, locales and even state resources. The Agency's failure to conduct such an analysis could result in an inaccurate assessment of the potential benefits of its proposals and lead to changes to the existing rule that would unjustifiably increase risks to human health and the environment.

**Conclusion**

With the lives of children and families across the country at stake, we write to strongly urge you to conduct an in-depth scientific review of the health and environmental impacts on farmworkers, their families, and rural communities resulting from the proposed weakening of the WPS. In particular, we ask that you: 1) conduct a full review of the draft proposed rule modifying the WPS to eliminate the AEZ; 2) add this matter to the agenda of one of the SAP's

[6] For more about this incident, please *see* Ted Goldberg, *Workers in Central Coast Pesticide Drift Tied to Dole, Driscoll's Were Sick for Days*, KQED News (July 5, 2018), https://www.kqed.org/news/11678534/workers-in-central-coast-pesticide-drift-tied-to-dole-driscolls-were-sick-for-days.

public meetings — either a meeting devoted exclusively to this matter or to the agenda of an upcoming meeting; 3) solicit input directly from farmworkers on the effectiveness of the AEZ; and 4) issue written findings on your conclusions. We also urge you to allow remote participation in any public meeting of the SAP on these matters and to notify stakeholder communities so that farmworkers and those providing direct medical, legal, and social services to farmworkers can readily participate.

Thank you very much for your consideration.

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# Exhibit A

*Annals of Work Exposures and Health*, 2018, Vol. 62, No. 9, 1134–1146
doi: 10.1093/annweh/wxy082
Advance Access publication 19 October 2018
Original Article



Original Article

# Spray Drift from a Conventional Axial Fan Airblast Sprayer in a Modern Orchard Work Environment

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Submitted 7 February 2018; revised 13 August 2018; editorial decision 21 August 2018; revised version accepted 4 September 2018.

## Abstract

Pesticide spray drift represents an important cause of crop damage and farmworker illness, especially among orchard workers. We drew upon exposure characteristics from known human illness cases to design a series of six spray trials that measured drift from a conventional axial fan airblast sprayer operating in a modern orchard work environment. Polyester line drift samples ($n = 270$; 45 per trial) were suspended on 15 vertical masts downwind of foliar applications of zinc, molybdenum, and copper micronutrient tracers. Samples were analyzed using inductively coupled plasma mass spectrometry and resulting masses were normalized by sprayer tank mix concentration to create tracer-based drift volume levels. Mixed-effects modeling described these levels in the context of spatial variability and buffers designed to protect workers from drift exposure. Field-based measurements showed evidence of drift up to 52 m downwind, which is approximately 1.7 times greater than the 30 m (100 ft) 'Application Exclusion Zone' defined for airblast sprayers by the United States Environmental Protection Agency Worker Protection Standard. When stratified by near (5 m), mid (26 m), and far (52 m) distances, geometric means and standard deviations for drift levels were 257 (1.8), 52 (2.0), and 20 (2.3) μl, respectively. Fixed effect model coefficients showed that higher wind speed [0.53; 95% confidence interval (CI): 0.35, 0.70] and sampling height (0.16; 95% CI: 0.11, 0.20) were positively associated with drift; increasing downwind distance (−0.05; 95% CI: −0.06, −0.04) was negatively associated with drift. Random effects showed large within-location variability, but relatively few systematic changes for individual locations across spray trials after accounting for wind speed, height, and distance. Our study findings demonstrate that buffers may offer drift exposure protection to orchard workers from airblast spraying. Variables such as orchard architecture, sampling height, and wind speed should be included in the evaluation and mitigation of risks from drift exposure. Data from our study may prove useful for estimating potential exposure and validating orchard-based bystander exposure models.

**Keywords:** airblast sprayer; application exclusion zone; drift; exposure assessment—mixed models; orchard; passive sampling; pesticide exposure; pesticide spraying

## Introduction

Spray drift is described as the off-target movement of droplets, irrespective of active ingredient, during or shortly after the time of pesticide application (Drewes et al., 1990; USEPA, 1990; Miller, 2014). Spray drift—hereafter referred to as 'drift' and distinct from movement by volatilization or windborne dust particles—represents an important cause of crop damage and farmworker illness resulting from agricultural applications (Felsot et al., 2010; Lee et al., 2011). It is a public health concern in the Pacific Northwest, especially among orchard workers (WADOH, 2013; WADOH, 2017). We drew upon exposure characteristics from known human illness cases to design a series of spray trials that measured drift from a conventional axial fan airblast (AFA) sprayer operating in a modern orchard. Our trials placed a grid of field targets in an orchard work environment during a simulated drift event, an incident when one or more humans are exposed to pesticide drift (Lee et al., 2011).

Method of application, droplet size, and meteorological conditions are key factors that influence drift (Murray and Vaughan, 1970; Thistle, 2004; Felsot et al., 2010; USEPA, 2016a). The AFA sprayer has been a standard tool for tree fruit pesticide application since its rapid and wide scale adoption in the 1950s (Fox et al., 2008; Matthews et al., 2014a). Over time, orchard management practices have greatly reduced tree height and canopy volume. As a result, conventional AFA output no longer matches modern canopies and thereby increases drift potential (Landers, 2011; Cross et al., 2013). Spraying finer droplets promotes good crop coverage, but it competes with the need for coarser droplets that reduce drift potential (ASABE, 2013). At a release height of 3 m, coarse droplets typically settle out within seconds due to gravitational force (deposition drift), whereas fine droplets can remain suspended for minutes or hours and be carried greater distances by the wind (airborne drift) (Matthews et al., 2014b; Miller, 2014). The deposition fraction of drift can be collected on horizontal surfaces by gravitational settling and the airborne fraction can be collected on vertical surfaces by interception or impaction (Hinds, 1999). Meteorological conditions modify the effect of droplet size and release height on drift potential. Higher wind speeds result in more drift at greater distances (Nuyttens et al., 2005). Larger fluctuations in wind direction increase the unpredictability of droplet travel direction and the amount of dilution due to atmospheric turbulence (Thistle, 2004).

Regulatory agencies attempt to protect pollinators, sensitive crops, bodies of water, and humans by mitigating drift using the above factors. Some pesticide labels specify acceptable wind speeds or buffer zones during application (USEPA, 2001; LERAP, 2002; De Schampheleire et al., 2007; EFSA, 2014). In the UK, aquatic buffer requirements vary by sprayer type, applied dose, and the presence of windbreaks (LERAP, 2002). In the USA, the federal Worker Protection Standard (WPS) includes an 'Application Exclusion Zone' (AEZ), a buffer that moves with active application equipment that 'must be free of all persons other than appropriately trained and equipped handlers' (USEPA, 2016b). An AEZ of 30 meters (m) or 100 feet (ft) is required for aerial, airblast, fumigant, smoke, mist, and fog applications and also for any other application methods that produce droplets having a volume median diameter less than 294 microns (USEPA, 2016b).

A growing body of research about sampling techniques (Donkersely and Nuyttens, 2011), spray mass balance (Jensen and Olesen, 2014), and experimental spray trials (Holterman et al., 2017) indicates sustained interest in characterizing orchard drift. Foliar application of elements (i.e. micronutrients) has long been recognized as a means for crop nutrition (Boynton, 1954; WSU, 2017a). Conveniently, experimental trials can be designed to apply multiple metal salt solutions to a single field sample, recovered through acid extraction, and then analyzed in a sensitive inductively coupled plasma mass spectrometry (ICP-MS) procedure (Foqué et al., 2014). For example, micronutrient tracers have been used in previous orchard-based drift field studies (Travis et al., 1985; Murray et al., 2000). Databases of such field studies are being developed to model orchard drift (Bonds et al., 2016; Holterman et al., 2017), including bystander exposure (Cunha et al., 2012; Van de Zande et al., 2014; Kennedy and Butler Ellis, 2017). Two models—the Bystander and Resident Exposure Assessment Model (BREAM) and Bystanders, Residents, Operators, and WorkerS Exposure (BROWSE)—were created to improve regulatory drift exposure and risk assessment in the European Union (Butler Ellis et al., 2010; Butler Ellis et al., 2017a,b). BROWSE model developers have called for more orchard-based experiments to support a wider range of drift distances, better describe the relationship

between airborne spray and bystander exposure, and provide data for model validation (Butler Ellis et al., 2017a).

Volunteers and mannequins have been used in drift studies to estimate potential dermal exposure by measuring deposits on coveralls (Butler Ellis et al., 2010; Butler Ellis et al., 2014). Such studies have addressed crucial components of human exposure, including collection efficiency (Butler Ellis et al., 2018). Yet, spatiotemporal aspects of orchard work environments known to result in drift-related illnesses have not been evaluated. For example, Calvert et al. (2015) describe a scenario in which an airblast application to pear trees drifted on 20 workers who were tying branches of cherry trees at distances from 9 to >107 m (30 to >350 ft) away. Orchard drift sampling usually occurs in flat areas downwind of one or a few sprayer passes, but no studies have simulated longer spray periods with sampling in downwind tree canopies more representative of orchard worker exposure scenarios.

The purpose of this study was to characterize the magnitude and spatial variability of drift levels in an orchard work environment during longer spray periods. Our secondary goals were: (i) to evaluate drift in the context of buffers designed to prevent bystander exposure and (ii) to develop methods for comparing the drift potential of different application technologies in future studies.

## Methods

Figure 1 provides an overview of our methods. Briefly, three micronutrient tracers—zinc (Zn), molybdenum (Mo), and copper (Cu)—were applied by an AFA sprayer to the same 0.4 hectare (1 acre) orchard block of trees at full canopy on 6 days: 1–2 July 2015; 10 June, 2016; and 28–30 September 2016. Each spray trial, which consisted of one tracer application to the block on a single day, involved the downwind collection of drift samples on two different matrices suspended from 6 m vertical masts. Samples were analyzed for metals in a laboratory and then used to build a mixed-effects model.

All field studies took place at a Washington State University (WSU) research orchard situated in a river valley that oriented the wind prevailingly from the north (Supplementary Figure S1 in the Supplementary Material, available at *Annals of Work Exposures and Health* online). Three varieties of apple trees were planted in rows along a north–south axis, trained to trellises, and had columnar-shaped canopies that reached approximately 3.5 m (11.5 ft) tall (Supplementary Figures S2–S3 in the Supplementary Material, available at *Annals of Work Exposures and Health* online). The study site was bordered by open flat land to the north, other orchard blocks to the east and south, and a small private service road with no traffic to the west.

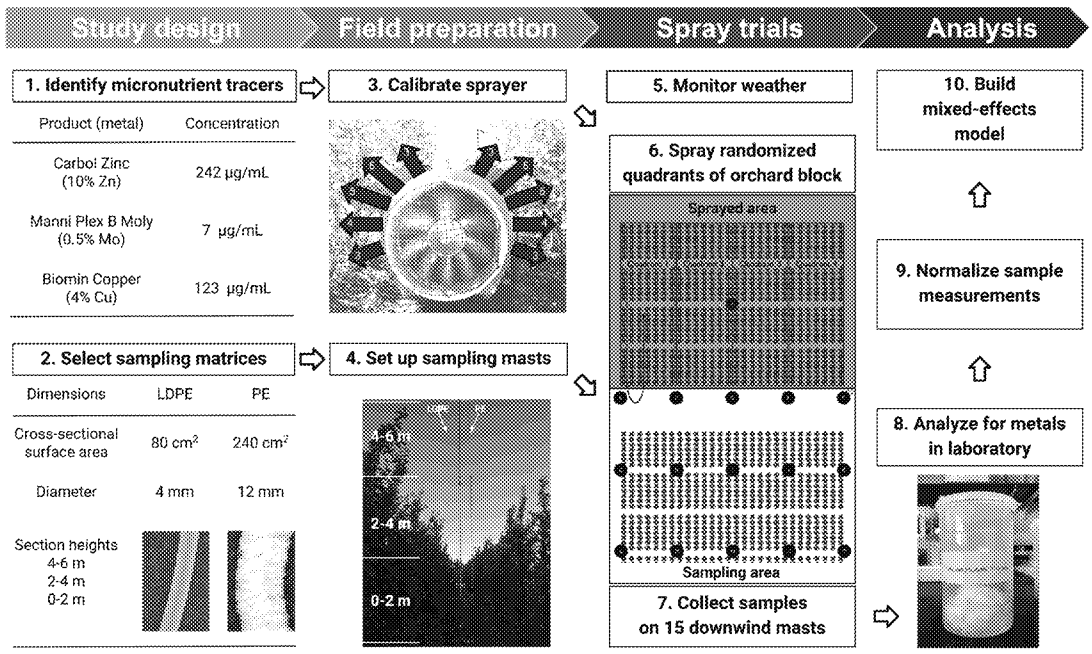


**Figure 1.** Overview of methods used in study. Drift levels were measured with passive sampling matrices consisting of low-density polyethylene (LDPE) and polyester (PE) lines.

## Study design

### Micronutrient tracers

Our trials utilized the efficiency of applying multiple metal salt solutions to a single target by adapting micronutrient tracer field sampling methods described by Cross et al. (2001a) and ICP-MS lab methods described by Zabkiewicz et al. (2008). Before each trial, the sprayer tank was flushed with cleaner (sodium tripolyphosphate and sodium carbonate) and then triple-rinsed. The certified applicator mixed, loaded, and applied label-recommended concentrations for one of three water soluble micronutrient product mixes: *Carbol™ Zinc* (10% Zn; 2.5 ml/l; 32 oz/100 gal), *Manni-Plex® B Moly* (0.5% Mo; 1.3 ml/l; 16 oz/100 gal), and *Biomin® Copper* (4% Cu; 2.5 ml/l; 32 oz/100 gal). The sprayer tank was allowed to mechanically agitate for at least 5 minutes (min) until the solution was thoroughly mixed. Bulk tank mix and water source samples were collected in 180 ml (6 oz) polyethylene containers before spraying began.

### Sampling matrices

Two different matrices were deployed to compare their relative drift sampling strengths: low-density polyethylene (LDPE) line for its uniform surface area and polyester (PE) line for having a high collection efficiency similar to pipe cleaners (Gilbert and Bell, 1988; Miller et al., 1989; Davis et al., 1993; Miller, 2014). The LDPE line was tubing with an outer diameter of 4 mm (0.16 in) (*Dynalon*; Rochester, NY; product #1248). The PE line was PE pile with wireless cotton core and a diameter of 12 mm (0.47 in) (*Hewitt and Booth*; Huddersfield, UK). We used pairwise scatter plots to investigate whether PE lines captured higher drift levels than LDPE lines after adjusting for cross sectional area.

## Field preparation

### Sprayer calibration

An AFA sprayer (*Rears Pak-Blast-100*) was calibrated to apply a liquid volume of 935 l/ha (100 gal/ac), which is commonly listed on pesticide labels as a volume per area goal for tree fruit applications. Expected volume output was calculated using parameters for orchard row width (3 m; 10 ft); tree spacing (0.9 m; 3 ft); tractor speed (1.3 m/s; 3.0 mph); boom type (curved); system operating pressure (14 bar; 205 psi); and nozzle type (steel, hollow cone, *TeeJet*), number (10), size (two D3, two D4, four D5, all with 25 cores), and arrangement (Hoheisel, 2016; Turbo-Mist, 2017). The field team calibrated tractor speed and sprayer system pressure, inserted new stainless steel nozzles, adjusted sprayer airflow direction into the tree canopy, and compared expected versus observed nozzle volumetric flow rates to ensure accurate nozzle output (Hoheisel, 2016). Nozzle and pressure settings were used to find theoretical droplet sizes, which were 110–125 μm and fit into the 'fine' droplet classification category (ASABE, 2013; TeeJet, 2014). The sprayer was outfitted with a global positioning system to verify the sprayer route and spray start and stop times to the nearest minute for each quadrant.

### Sampling masts

Fifteen 6 m (20 ft) vertical target masts were set up between tree rows in a sampling area that was downwind of the area to be sprayed. Each mast had collocated LDPE and PE line matrices suspended in a vertical plane with crossbars at 2, 4, and 6 m (Supplementary Figure S4 in the Supplementary Material, available at *Annals of Work Exposures and Health* online).

## Spray trials

### Weather conditions

Local meteorological measurements followed applicable protocols from the American Society of Agricultural and Biological Engineers (ASABE) and the International Organization for Standardization (ISO) (ASABE, 2004; ISO, 2005). Wind speed, wind direction, air temperature, and relative humidity were recorded at two locations on opposite sides of the study site.

A permanent on-site station (WSU AgWeatherNet) was located approximately 70 m (230 ft) west of the nearest corner of the sprayed block with instruments that were approximately 2 m (about 6 ft) above the ground. Data were collected with a 0.2 Hz sampling frequency by a data logger (*Campbell Scientific CR-1000;* Logan, UT), processed as 15-min averages, and downloaded from an online portal (Pierce and Elliott, 2008; WSU, 2015). The wind speed sensor (*Met One Model 014A;* Grants Pass, OR) was a three-cup anemometer. The wind direction sensor (*Met One Model 024A;* Grants Pass, OR) was a wind vane that reported one of eight categories [four cardinal (N-E-S-W) and four ordinal (NE-SE-SW-NW)]. Temperature and relative humidity (*Campbell Scientific Rotronic HC2S3 Model 107;* Logan, UT) data were also available (WSU, 2015; WSU, 2017b).

A second, temporary station was placed approximately 190 m (623 ft) northeast of the nearest corner of the sprayed block. Data were collected with a 0.1 Hz sampling frequency by a data logger (*Campbell Scientific CR-1000*; Logan, UT), processed as 1-min averages, and downloaded to a laptop. Measurements were taken at two different heights. At 3 m (10 ft), there was a three-cup anemometer with a wind vane (*Met One Model 034B;* Grants Pass, OR) and temperature probe (*Campbell Scientific Model 109;* Logan, UT). At

10 m (33 ft), there was a three-axis ultrasonic anemometer (*RM Young Model 81000V*; Traverse City, MI) and a temperature and relative humidity probe (*Campbell Scientific Model HMP45C-L*; Logan, UT). The temporary meteorological station measured wind direction in azimuth degrees.

Only spray trials that met ISO meteorological data quality standards for drift sampling were included: samples were replicated at least three times in similar wind conditions, wind speeds were at least 1.0 m/s (2.2 mph), mean wind direction was at 90° ± 30° to the downwind edge of the sprayed area (i.e. wind rose direction ≥ 330° or ≤ 30°), and temperatures were 5–35°C (41–95°F) (ISO, 2005).

### Randomized quadrant spraying

Application start timing decisions were based on the most recent 15-min average meteorological measurements for wind speed, wind direction, and temperature. A block of 28 tree rows was divided into four quadrants of approximately seven rows each (Fig. 2). Quadrant spray order was randomized to mitigate the effect of changing environmental conditions across spray trials. A certified applicator sprayed each row in serpentine fashion with nozzles open on both sides of the sprayer as it traveled between every row. Nozzles were turned off during turns. The outward facing half of outside rows was not sprayed.

### Sample collection

We followed applicable ISO drift sampling guidelines by establishing a coordinate reference system with an array of samples, measuring all distances from the downwind edge of the sprayed area, and setting up vertical target masts for air-assisted orchard sprayers (ISO, 2005). Drift samples were taken in an adjacent orchard block at different distances and heights relevant to farmworker activities (e.g. harvesting, pruning, or thinning on the ground or a ladder). Three rows of five vertical masts were arranged 5 m (16 ft, Masts B-F), 26 m (85 ft, Masts G-K), and 52 m (171 ft, Masts L-P) downwind of the sprayed block (Fig. 2). Reference samples were also collected in the middle of the sprayed block (Mast A) and 200 m (656 ft) upwind (Mast Q). To understand the vertical drift profile for each spray trial, continuous lines were cut into discrete sections (2 m; 7 ft) and stored in separate collection bottles at ambient temperature (ISO, 2005).

## Analysis

### Laboratory metals analysis

Samples were submitted to the DEOHS Environmental Health Laboratory (EHL) in Seattle and analyzed for micronutrient tracer mass. Aliquots of the sprayer bulk tank and water source samples were prepared using microwave assisted digestion (open vessel, ramp to 90°C in 10 min and hold for 20 min) and then diluted with deionized water to final concentration of 10% $HNO_3$, 6% HCl, and 10 ppb terbium (Tb) recovery standard. Bulk samples were digested because of precipitation and apparent microbial growth in some sample containers. To all other samples, 10% $HNO_3$ with 10 ppb Tb was added. The extraction and digestion solutions were analyzed by ICP-MS based on Method 6020a Rev.1 2007 from United States Environmental Protection Agency (USEPA) (USEPA, 1998). A minimum of three matrix blanks were analyzed with each batch of samples to quantify and correct for mean blank background metal levels.

Samples with resulting negative values were considered below the limit of blank (LOB), or the concentration found when replicates of a blank sample containing no analyte were tested (Armbruster and Pry, 2008). The limit of quantitation (LOQ) was determined by multiplying the standard deviation (SD) of the matrix blanks by 3. We explored both substitution (e.g. $\frac{LOQ}{\sqrt{2}}$) and imputation techniques for samples below the LOQ, but any gains made by these methods did not compare to using the log-normally (ln) distributed raw lab values themselves (Succop et al., 2004). As such, we included sample measurements that were below LOQ but above LOB. Measurements below LOB ($n = 4$) were excluded.

### Sample measurement normalization

Laboratory values were normalized by dividing the mass per sample ($M_{sample}$ in µg per 2 m section of PE line) by the concentration of the tracer in the tank mix ($C_{tank}$ in µg/ml) (Cross et al., 2001b). This allowed comparison of corresponding normalized values (in µl) for different spray trials in a way that eliminated micronutrient effects, which we defined as differences in concentration due to label mixing instructions or sampling variability. Normalized results were reported as drift levels, or volume tank equivalents ($V_{drift}$) deposited on each sample, giving a convenient interpretation shown by the following worked example:

$$V_{drift} = \frac{M_{sample}}{C_{tank}} = \frac{0.871\mu g}{11.4\frac{\mu g}{ml}} = 0.0764\,ml = 76.4\mu l$$

### Mixed-effects model

Data were managed and analyzed with R v.3.3.3 (R Core Team, 2017) using the following packages:

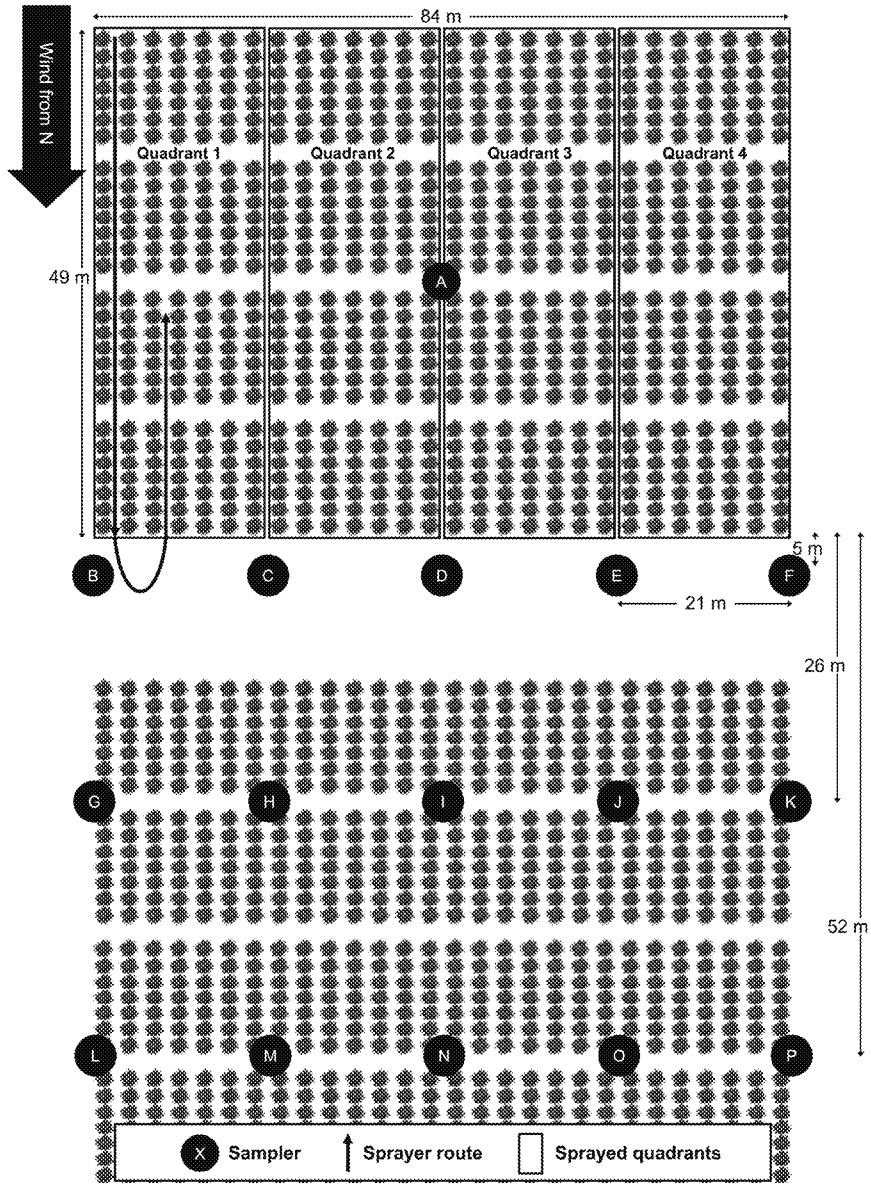


**Figure 2.** Relative locations of sprayed and sampling blocks with prevailing wind from the north. Sprayed block was divided into four quadrants and sprayed in a randomized order by the axial fan airblast sprayer. Drift sample locations were Masts B-P organized in a grid downwind of the sprayed block. Reference sample locations were Mast A (middle of the sprayed area) and Mast Q (not pictured; 200 m upwind).

ggplot2, knitr, lme4, lubridate, reshape, and rstudio (Wickham, 2007; Wickham, 2009; Grolemund and Wickham, 2011; RStudio Team, 2012; Bates et al., 2015; Xie, 2017). We produced tables of arithmetic and geometric means (AM; GM) and standard deviations (ASD; GSD), scatter plots, box plots, and heat maps.

Linear mixed-effects modeling fit by restricted maximum likelihood was used to assess the significance of downwind distance, height, and wind speed in explaining variations of drift level (ln-µl) by location, as measured on PE line [$n$ = 270 (samples), $k$ = 15 (locations), l = 6 (spray trials)]. The model was generated using the lmer function in the R package lme4, with continuous measures of distance, height, and wind speed as fixed effects and categorical location as a random effect. To estimate their impact on within- and between-location

variance components, we reran the model without fixed effects. We assumed a ln distribution for drift level and a normal distribution for all other parameters. Model significance was reported at the $\alpha = 0.05$ level.

## Results

### Weather conditions

Overall meteorological conditions were relatively similar across spray trials and measurement intervals (Table 1). Spraying typically occurred between 8:00 AM and approximately noon. The duration was longer in September 2016 because three sprayers were used each day compared to only two in July 2015 and June 2016. Results for 1-min averages were not available from 1–2 July 2015 due to a malfunctioning data logger.

Average wind speeds at 2 m elevation were within USEPA's drift-reducing wind recommendations of 3–10 mph (USEPA, 2001). The 15-min wind speed measurements taken 70 m west of the sprayed block at a height of 2 m ranged from 2.9 to 4.0 m/s (6.4–8.9 mph); 1-min measurements taken 190 m northeast at a height of 10 m ranged from 3.4 to 4.7 m/s (7.6–10.5 mph). As expected, wind direction was almost exclusively from a northerly direction. The 2 m station always averaged ±20° from true north. The 10 m station once averaged −48° (northwest) on 10 June 2016, but otherwise no more than approximately ±20° from true north (Supplementary Figure S5 in the Supplementary Material, available at *Annals of Work Exposures and Health* online).

Temperatures in July 2015 were 10–15°C higher than spray days in early summer or fall, but still within the acceptable range of temperatures for drift sampling. Inclusion of temperature, humidity, and 1-min (instead of 15-min) wind data as fixed effects in secondary models did not impact study findings.

### Sample collection

Samples ($n = 459$) were collected over six spray days (Supplementary Table S1 in the Supplementary Material, available at *Annals of Work Exposures and Health* online). During each of the first three spray days, 102 line samples (3 PE and 3 LDPE from 17 masts) were collected. Only PE samples ($n = 51$) were collected during the last three spray days. After demonstrating that the cross sectional area adjusted deposits from 1 July 2015 were highly correlated (Fig. 3, $R^2 = 0.81$), LDPE samples collected on 2 July 2015 and 10 June 2016 were not analyzed and LDPE samples were not collected on 28–30 September 2016. The intercept in Fig. 3 demonstrates that PE line collected 0.072 µl/cm² more than LDPE line, on average. Over the entire study, a total of 306 PE samples (51 from each of the six spray days) were collected and analyzed. There were 270 drift samples (Masts B-P) and 36 reference samples (Masts A and Q).

### Laboratory metals analysis

Reporting limits for Zn, Mo, and Cu sampling with LDPE (LOB: 0.1, 0.001, 0.01 µg; LOQ: 0.2, 0.005, 0.04 µg) and PE (LOB: 3, 0.03, 0.7 µg; LOQ: 8, 0.08, and 2 µg) were low enough to avoid substantial data censoring (Supplementary Table S2 in the Supplementary Material, available at *Annals of Work Exposures and Health* online). With the exception of four PE Zn measurements from 52 m downwind, all drift samples were above LOB and therefore included in the statistical analysis. LDPE spike recovery efficiencies for Zn, Mo, and Cu from the July 2015 sample analysis batch were 91, 87, and 90%. PE spike recovery efficiencies for Zn, Mo, and Cu from

**Table 1.** Summary of meteorological data collected during each spray day.

| Spray day | Time | Duration[a] (min) | Temp[b] (°C) | Wind speed (m/s)[c] AM (ASD) | Wind direction (°)[c] AM (ASD) |
|---|---|---|---|---|---|
| 1 July 2015 | 10:41–12:13 | 92 | 32.4 | 3.3 (0.3); - - | 360 (0.0); - - |
| 2 July 2015 | 10:15–11:21 | 66 | 31.6 | 4.0 (0.3); - - | 360 (0.0); - - |
| 10 June 2016 | 10:44–12:08 | 84 | 19.3 | 3.7 (1.5); 4.7 (2.0) | 340 (0.6); 312 (0.5) |
| 28 September 2016 | 09:34–11:35 | 121 | 18.9 | 4.0 (0.2); 4.4 (1.1) | 360 (0.0); 338 (0.2) |
| 29 September 2016 | 08:50–10:42 | 112 | 16.0 | 2.9 (0.2); 3.4 (0.9) | 12 (0.4); 343 (0.2) |
| 30 September 2016 | 08:20–10:07 | 107 | 15.5 | 3.2 (0.2); 3.7 (1.0) | 360 (0.0); 340 (0.2) |

[a]Duration was longer in September 2016 because three sprayers were used each day compared to only two sprayers in July 2015 and June 2016.

[b]Arithmetic mean (AM) for 15-min temperature measurements.

[c]AM and standard deviation (ASD) for wind measurements. 15-min data to the left of each semicolon and 1-min data to the right. Data are reported from two locations: (i) 15-min averages from a wind cup anemometer located 70 m west of the sprayed block at 2 m elevation and (ii) 1-min averages from an ultrasonic anemometer located 190 m northeast of the sprayed block at 10 m elevation. Wind speed was measured in m/s and wind direction in azimuth degrees, where 0° or 360° represents wind from the north. Only 15-min data were available for 1–2 July 2015.

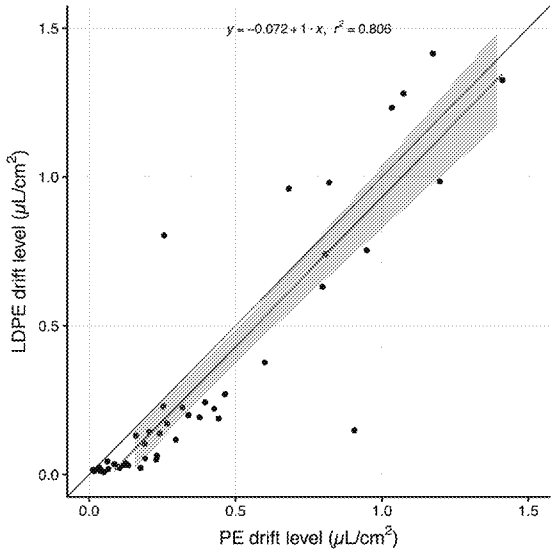


**Figure 3.** Tracer-based drift volume level collected on collocated polyester (PE) and low-density polyethylene (LDPE) lines, adjusted for cross sectional area, July 2015. Paired PE and LDPE drift levels were correlated ($R^2$ = 0.81), with PE collecting 0.072 µL/cm² more than LDPE, on average.

July 2015, June 2016, and September 2016 were 102–115, 82–101, and 92–108% (Supplementary Table S3 in the Supplementary Material, available at *Annals of Work Exposures and Health* online). Mean tank mix concentrations for Zn, Mo, and Cu across all AFA trials were 242, 7, and 123 µg/ml, respectively (Fig. 1; Supplementary Table S1 in the Supplementary Material, available at *Annals of Work Exposures and Health* online). Mean Zn, Mo, and Cu background concentrations in the water source as a percentage of tank mix concentrations were 0.056, 0.0077, and 0.00038%, respectively.

### Mixed-effects model

Summary statistics indicate evidence of drift at distances up to 52 m downwind. Tracer-based drift volume levels for reference PE samples taken in the middle of the sprayed area (Mast A, $n$ = 18) and 200 m upwind (Mast Q, $n$ = 18) had GMs and GSDs of 1079 (2.3) and 10 (1.9) µl, respectively (Supplementary Table S4 in the Supplementary Material, available at *Annals of Work Exposures and Health* online).

Among 270 PE drift samples, 266 (98.5%) were above LOB (Table 2). The four values below LOB were 52 m downwind and at the 0–2 m mast height sections. The GM (GSD) for all drift levels was 66 (3.6) µl. When stratified by near (5 m), mid (26 m), and far (52 m) downwind distances, drift levels were 257 (1.8), 52 (2.0), and 20 (2.3) µl, respectively. When stratified by high (4–6 m), medium (2–4 m), and low (0–2 m) vertical heights, drift levels were 89 (2.5), 65 (3.4), and 51 (4.8) µl, respectively. When stratified by downwind distance and height, drift levels decreased with height at near distances, but increased with height at mid and far distances. As expected, the data were ln distributed. Subsequent analysis was on ln-transformed drift levels.

Table 3 provides point estimates and 95% confidence intervals for the mixed-effects model. Increasing distance was significantly associated with a decrease in drift level (−0.05; 95% CI: −0.06, −0.04; $P < 0.001$). This coefficient represents a −0.05 change in ln-µl drift volume per m distance. Higher height (0.16; 95% CI: 0.11, 0.20; $P < 0.001$) and wind speed (0.53; 95% CI: 0.35, 0.70; $P < 0.001$) were significantly associated with an increase in drift level. These coefficients represent a 0.16 change in ln-µl drift volume per m height and a 0.53 change in ln-µl drift volume per m/s, respectively.

More of the remaining variance was within-location (0.378, $\frac{0.378}{0.093+0.378}\times 100 = 80.2\%$) than between-location (0.093; 19.8%). Distance, height, and wind speed impacted the between-location variance component (1.206–0.093; 92% reduction) considerably, but did not greatly alter the within-location component (0.499–0.378; 24% reduction). This difference in percent reduction suggests that there were relatively few systematic changes for individual locations across spray trials.

## Discussion

This study characterized spray drift in an orchard work environment and developed a method for comparing the drift potential of different application technologies. We report tracer-based drift volume level, a useful metric that describes the tank mix volume equivalent intercepted by vertical sampling lines or drift as a percent of the applied tank volume. After adjusting for cross sectional area, we found that fibrous PE lines collected 0.072 µl/cm² more than collocated smooth LDPE lines, on average. We propose that this difference was due mainly to a higher collection efficiency via interception and impaction of smaller aerosols throughout the PE line matrix and, to a lesser extent, gravitational settling of larger aerosols on horizontal fibers.

A unique design feature of this study was that it drew from spatiotemporal characteristics of actual farmworker illness scenarios. Instead of spraying one or a few tree rows, our trials included repeated sprays in a 28-row orchard block. Other studies have measured airborne drift using vertical masts, but this was the first time a grid of such masts was used to characterize

**Table 2.** Summary statistics[a] for tracer-based drift volume level (µl) collected on polyester line sampling matrices from axial fan airblast spray trials.

| Sample | <LOB | N | AM | ASD | GM | GSD |
|---|---|---|---|---|---|---|
| Total drift samples | 4 | 266 | 136 | 179 | 66 | 3.6 |
| Downwind distance[b] | | | | | | |
| Near (5 m) | 0 | 90 | 310 | 216 | 257 | 1.8 |
| Mid (26 m) | 0 | 90 | 66 | 42 | 52 | 2.0 |
| Far (52 m) | 4 | 86 | 28 | 24 | 20 | 2.3 |
| Vertical height[c] | | | | | | |
| High (4–6 m) | 0 | 90 | 134 | 145 | 89 | 2.5 |
| Medium (2–4 m) | 0 | 90 | 132 | 190 | 65 | 3.4 |
| Low (0–2 m) | 4 | 86 | 142 | 201 | 49 | 4.8 |
| Near (5 m) distance at height | | | | | | |
| High (4–6 m) | 0 | 30 | 266 | 183 | 222 | 1.8 |
| Medium (2–4 m) | 0 | 30 | 310 | 244 | 252 | 1.9 |
| Low (0–2 m) | 0 | 30 | 354 | 215 | 304 | 1.8 |
| Mid (26 m) distance at height | | | | | | |
| High (4–6 m) | 0 | 30 | 90 | 47 | 77 | 1.8 |
| Medium (2–4 m) | 0 | 30 | 63 | 35 | 53 | 1.8 |
| Low (0–2 m) | 0 | 30 | 44 | 29 | 35 | 2.0 |
| Far (52 m) distance at height[d] | | | | | | |
| High (4–6 m) | 0 | 30 | 47 | 26 | 41 | 1.8 |
| Medium (2–4 m) | 0 | 30 | 25 | 16 | 20 | 1.9 |
| Low (0–2 m) | 4 | 26 | 11 | 6 | 9 | 1.8 |

[a]Listed by limit of blank (LOB), number of measurements (N), arithmetic mean (AM), arithmetic standard deviation (ASD), geometric mean (GM), and geometric standard deviation (GSD). N is reflective of each micronutrient tracer analyzed via inductively coupled plasma mass spectrometry (ICP-MS).
[b]As shown in Fig. 1, downwind sampling rows were at distances of 5 (Near), 26 (Mid), and 52 (Far) m from the southern edge of the sprayed area. These correspond to Masts B-F (Near), G-K (Mid), and L-P (Far).
[c]Sampling heights were categorized in terms of 2 m polyester (PE) line sections taken at 4–6 m (High), 2–4 m (Medium), and 0–2 m (Low) above the ground.
[d]AM (and GM) for High, Medium, and Low heights at Far distances were 3.9 (3.7), 1.5 (1.7), and 1.6 (1.3) times greater than background levels measured at the upwind reference location (Mast Q). See Supplementary Table S4 (available at *Annals of Work Exposures and Health* online) for reference location values. All measurements were corrected for lab matrix blank values.

**Table 3.** Coefficients for determinants of drift from axial fan airblast spray trials[a].

| Fixed effects | Model estimate (95% CI) | SE | *P*-value |
|---|---|---|---|
| Intercept | 3.17 (2.48, 3.87) | 0.36 | <0.001 |
| Distance (m) | −0.05 (−0.06, −0.04) | 0.01 | <0.001 |
| Height (m) | 0.16 (0.11, 0.20) | 0.23 | <0.001 |
| Wind speed (m/s) | 0.53 (0.35, 0.70) | 0.09 | <0.001 |
| | | | |
| Variance components[b] | Random and fixed effects included | Only random effect included | |
| Within-location (Residual) | 0.378 (80.2%) | 0.499 (29.3%) | |
| Between-location (Intercept) | 0.093 (19.8%) | 1.206 (70.7%) | |
| Total variance | 0.471 (100%) | 1.705 (100%) | |

[a]There were 266 tracer-based drift volume levels (ln-µL) measured on polyester lines at 15 downwind locations in six spray trials.
[b]When the fixed effects were dropped from the model, within-location variance was 0.499 (29.3%) and between-location variance was 1.206 (70.7%). Fixed effects impacted the between-location component of the variance (1.206–0.093; 92% reduction) considerably, but did not alter the within-location component of variance (0.499–0.378; 24% reduction) as much. The difference between these models suggests that there were relatively few systematic changes for individual locations across spray trials.

the variability of drift levels in a downwind orchard block. We used a mixed-effects model to investigate the relationship between orchard work environment characteristics and between- and within-location variance components of drift levels, enabling future development of similar exposure groupings for orchard workers.

'Tree canyon effects', akin to urban street canyon effects (Sini et al., 1996), may isolate components of wind flow below the canopy where orchard workers are often located. Using an orchard spray drift model and light detection and ranging (LIDAR), Tsai (2007) demonstrated the complex movement of within-canopy spray, which can escape the end of tree rows as drift when aligned with wind direction.

Study results highlight the importance of differentiating buffers not only by sprayer type and distance, but also by wind speed, orchard architecture, and sampling height (e.g. workers on the ground or on ladders). As expected, drift levels decayed with downwind distance (Table 2). Drift was measured up to 52 m downwind, which is approximately 1.7 times greater than the 30 m (100 ft) AEZ buffer for orchard sprayers defined by the Worker Protection Standard (USEPA, 2016b). Based on this standard, the first two rows of our sampling area should have been free of all persons other than appropriately trained and equipped handlers when the sprayer was at the southern edge of the sprayed block (USEPA, 2016b). As distance from the sprayed block increased, vertical profiles indicated more deposition on the highest line section (4–6 m) relative to lower sections. GM drift levels for high (4–6 m), medium (2–4 m), and low (0–2 m) heights at far (52 m) distances were 3.7, 1.7, and 1.3 times greater than background levels measured at the reference samples 200 m upwind.

Our findings are largely consistent with other orchard-based field studies. A recent meta analysis of spray drift sampling found that 4.4% of total pesticide applied was measured between 0 and 5 m downwind of fully leafed orchards (Donkersley and Nuyttens, 2011). In our study, we estimate that 1.7% $\left(\frac{0.000310l \times 21{,}000}{378l} \times 100\right)$ of the total volume applied was measurable 5 m downwind; this percentage is based on an AM drift level of 0.000310 l (310 µl) measured 5 m downwind from an applied volume of 378 l during each trial and a vertical sampling field surface area (504 $m^2$ = 84 m wide by 6 m tall) that was 21,000 times larger than the PE line cross sectional area (0.024 $m^2$; 240 $cm^2$). At 5 m downwind, Cross et al. (2001a) measured normalized spray deposits on 0–4 m sections of vertical sampling lines that were two to five times greater than those on 4–6 m sections. We observed deposits that were 1.2 $\left(\frac{354}{0.5(310+266)}\right)$ times greater, on average. Fox et al. (1993) reported that deposits on floss decreased with height at 7.5 m downwind, but were more uniform across all heights at 15, 30, and 60 m downwind. Butler Ellis et al. (2014) reported that average bystander exposures were higher when wind was directed along orchard rows and that bystander exposure showed a high level of variability.

There are several limitations to this study. First, it modeled values from stationary area sampling instead of workers. Potential exposure estimates are not provided because we have not addressed the relationship between PE lines and a human body. Though outside the scope of this paper, we believe such work is possible by using, for example, measured drift volume levels, product label mixing instructions, and publicly available statistical data about human factors used to assess exposure. Second, data were collected in one orchard and may not be representative of other planting systems or sprayer configurations, such as adapted airflow or different nozzles (Khot et al., 2012). Also, tree row orientation in the sprayed block was parallel to the prevailing wind direction as opposed to perpendicular, which is required by some protocols (ASABE, 2004; ISO, 2005). Third, although the field team followed detailed standard operating procedures for prespray sample setup and postspray sample harvesting, some sample surfaces contacted gloved hands, tree leaves, or the ground; however, inclusion or exclusion of these potentially contaminated samples ($n$ = 12; 4%) did not change our findings.

We recommend vertical passive sampling with PE lines and micronutrient tracers in future assessments of orchard drift. Drift levels measured by highly efficient, nonuniform surfaces such as PE lines could be used to estimate potential worker exposure and validate other models such as BROWSE (Butler Ellis et al., 2017a,b). As part of our larger study, we found that optical particle counters, despite limitations that do not allow for analysis of chemical composition or detection of particles with diameters smaller than 0.5 µm, can detect drift plumes and finer time-resolved data on aerosol levels (Blanco et al., 2017). This approach may hold promise for real-time monitoring of human exposure during drift events. To better understand how orchard drift dynamics contribute to environmental and occupational exposures, it would be ideal to take measurements from actual workers involved in actual drift events. Such studies would require equipping orchardists and orchard workers with low-cost and easy-to-use sensors such as on-site meteorological stations and direct-reading particle counters to identify when drift reaches a level of concern for human exposure.

## Conclusions

Our study measured tracer-based drift volume levels from a conventional AFA sprayer in a modern orchard. The field site proved to be ideal for the spray trials because it adhered to applicable drift sampling standards. Vertical PE

lines captured greater drift levels than LDPE lines. Buffers are likely to offer drift exposure protection to orchard workers near an active AFA sprayer. However, drift was measured well beyond the USEPA 'Application Exclusion Zone' buffer. Buffers for airblast applications could be further defined by factors such as worker location, wind speed, and features of orchard architecture such as tree canopy shape, height, and density. Data from our study may prove useful for estimating potential orchard worker exposure and validating bystander drift exposure models.

## Supplementary Data

Supplementary data are available at *Annals of Work Exposures and Health* online.

## Acknowledgements

Field study logistics were supported by Washington State University Tree Fruit Research & Extension Center, Washington Tree Fruit Research Commission, and Vine Tech Equipment. Samples were collected by the PNASH Center field team (Pablo Palmández, Maria Negrete, Maria Tchong-French, Jane Pouzou, Jose Carmona, Ryan Babadi, Christine Perez Delgado). Chemical analyses were conducted by the DEOHS Environmental Health Laboratory (Catherine Signoretty, Russell Dills). Informatics and computing support was provided by Brian High and the DEOHS Information Technology Team. Some weather data provided courtesy of and copyright by Washington State University AgWeatherNet. Contents are solely the responsibility of the authors.

## Funding

Funding for this project was provided by the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health through Cooperative Agreement #5 U54 OH007544 with the Pacific Northwest Agricultural Safety and Health (PNASH) Center. Additional support was provided by the Washington State Medical Aid & Accident Funding Initiative through the University of Washington Department of Environmental and Occupational Health Sciences (DEOHS).

## Conflict of Interest

The authors declare no conflict of interest relating to the material presented in this article. Its contents, including any opinions and/or conclusions expressed, are solely those of the authors.

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# Exhibit B

# COUNTY OF SANTA CRUZ

OFFICE OF THE AGRICULTURAL COMMISSIONER
**Juan Hidalgo**
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

June 1, 2018

NOTICE OF PROPOSED ACTION,
NATURE OF VIOLATION, AND
RIGHT TO REQUEST HEARING

Via Certified Mail
Return Receipt Requested

FILE NO. 44171803

TO: LOS AMIGOS HARVESTING
Farm Labor Contractor License Number: FLC000234426
Attn: Patti Garrett
401 Hames Road
Watsonville, CA 95076

You are hereby notified that the Agricultural Commissioner for the County of Santa Cruz proposes that you be fined the amount of $56,000.00 as a civil penalty for violating California's pesticide laws as explained below. The authority for this action is granted to the County Agricultural Commissioner pursuant to the provisions of Section 12999.5 of the Food and Agricultural Code (FAC). The amount of this fine was determined by applying the circumstances of the violations to the fine regulations adopted for use in these actions. These regulations are found in Title 3, California Code of Regulations (3 CCR), section 6130, a copy of which is enclosed with this Notice of Proposed Action.

## FACTUAL CIRCUMSTANCES

On June 29, 2017, between approximately 7:30 a.m. and 8:30 a.m., Los Amigos Harvesting applied Pristine Fungicide (EPA Reg. No. 7969-199, active ingredients pyraclostrobin and boscalid), Rally 40WSP (EPA Reg. No. 62719-410, active ingredient myclobutanil), DiPel DF (EPA Reg. No. 73049-39, active ingredient Bacillus thuringiensis) and Widespread Max (CA Reg. No. 34704-50061, active ingredient polyether-polymethylsiloxane-copolymer polyether) to treat a raspberry field (Garrett Farms site 1A Nugent Ranch) using a tractor-driven air delivery spray rig. Garrett Farms site 1A Nugent Ranch is located approximately 48 feet southeast of another raspberry field (Coastal Berry - North site 21A Bronson Ranch) where field worker employees of FMG Farm Contractor, Inc. (FMG) were harvesting. Prior to starting to spray the pesticides, the Los Amigos Harvesting applicator asked FMG employees how long they planned to be harvesting raspberries at Coastal Berry - North site 21A Bronson Ranch, and told them he was going to make a pesticide application but would stay a safe distance away and that they should signal him if they smelled the pesticides.
Shortly after Los Amigos Harvesting began spraying, multiple FMG employees working in Coastal Berry - North site 21A Bronson Ranch began to experience symptoms of acute illness. Of the twenty-four (24) FMG employees working at the site, fifteen (15) of these employees experienced one or more symptoms including

nausea, vomiting, stomachache, headache, dizziness, difficulty breathing, high temperature, dry mouth, a bad taste in their mouth, and throat, eye and skin irritation. 9-1-1 emergency services was called by an FMG field crew supervisor at the site. Five (5) FMG employees exhibiting acute symptoms of pesticide exposure were decontaminated onsite by first responders (Watsonville Fire Department) and transported to Watsonville Community Hospital by ambulance; one (1) FMG employee sought medical care for acute symptoms of pesticide exposure at the same hospital later the same day; and two (2) additional FMG employees obtained professional medical care for acute symptoms of pesticide exposure at a local clinic the following day. The diagnoses/medical impressions of the professional medical providers attending to the eight (8) FMG employees were that the illness symptoms were caused by exposure to pesticide.
In subsequent interviews, multiple FMG employees reported that the pesticide application took place directly across from them, that they saw the mist from the pesticide application drifting toward where they were working, and that they could smell the pesticide odor in the field. Foliar samples taken from Coastal Berry - North site 21A Bronson Ranch where the FMG employees had been harvesting tested positive for pyraclostrobin, boscalid and myclobutanil.

**Violation 1**

*3 CCR section 6614(b)(1)*

California Code of Regulations Title 3, section 6614(b)(1) states, in pertinent part:

"Notwithstanding that substantial drift will be prevented, no pesticide application shall be made or continued when… (1) There is a reasonable possibility of contamination of the bodies or clothing of persons not involved in the application process…"

Los Amigos Harvesting applied the pesticides Pristine Fungicide, Rally 40WSP, DiPel DF and Widespread Max with an air delivery spray rig in close proximity to FMG employees harvesting raspberries at Coastal Berry - North site 1A Bronson Ranch. Los Amigos Harvesting did not wait for FMG employees to finish harvest activities and leave the area prior to making the pesticide application. Los Amigos Harvesting applied the pesticides with a tractor-hitched air delivery sprayer that produced a "very fine" spray droplet size with a high potential for drift. Los Amigos Harvesting operated the spray rig in a N/NE to S/SW pattern while applying the pesticides, resulting in pesticides from the air delivery sprayer being discharged in the direction of nearby FMG employees. The applied pesticides moved off target to Coastal Berry - North site 1A Bronson Ranch where FMG employees were working, causing an actual health hazard resulting in multiple FMG employees experiencing acute illness symptoms and eight (8) of said employees requiring professional medical care due to their symptoms. The diagnoses/medical impressions of the professional medical providers attending to the eight (8) symptomatic FMG employees were that the illness symptoms were caused by exposure to pesticide. Foliar samples taken from Coastal Berry - North site 21A Bronson Ranch where the FMG employees had been harvesting were tested for pyraclostrobin, boscalid and myclobutanil, the active ingredients in Pristine Fungicide and Rally WSP, and came back positive for said active ingredients. Los Amigos Harvesting therefore applied pesticides in a way that created a reasonable possibility of contamination of the bodies or clothing of persons not involved in the application process.

**Penalty**

Section 12996.5(b) of the Food and Agricultural Code states: "The exposure of each person to a pesticide resulting from the violation of section 12972 or 12973, or any regulation adopted pursuant to section 12976, 12981, or 14005, that causes acute illnesses or injury, shall constitute a separate violation of the statute or regulation."

This violation is considered a "Class A" violation. According to Section 6130 of the California Code of Regulations, Title 3, violations are designated as "Class A", "Class B", and "Class C." A "Class A" violation is a violation of a law or regulation that caused a health, property or environmental hazard. The fine range for a "Class A" violation is $700.00 to $5,000.00. Having considered the respondent's compliance history in light of its recent initiation of operations, due to the nature of the violation, including the potential effects the violation had on the twenty-four (24) people who were subject to potential exposure by multiple pesticides, the severity of the actual effects the violation had on the fifteen (15) people who were exposed to multiple pesticides and suffered symptoms and medical conditions consistent with pesticide exposure; and the increased severity of the actual effects the violation had on the eight (8) people who were exposed to multiple pesticides and suffered acute symptoms and medical conditions from same which necessitated the need for professional medical care and attention, the Agricultural Commissioner proposes to fine you $5,000.00 each for eight (8) separate counts of the above described violation for a total of $40,000.00.

**Violation 2**

*3 CCR section 6614(b)(3)*

California Code of Regulations Title 3, section 6614(b)(3) states, in pertinent part:

"Notwithstanding that substantial drift will be prevented, no pesticide application shall be made or continued when... (3) There is a reasonable possibility of contamination of nontarget public or private property, including the creation of a health hazard, preventing normal use of such property...."

Los Amigos Harvesting applied the pesticides Pristine Fungicide, Rally 40WSP, DiPel DF and Widespread Max with an air delivery spray rig in close proximity to Coastal Berry - North site 1A Bronson Ranch where an FMG harvest crew was working. Los Amigos Harvesting applied the pesticides with a tractor-hitched air delivery sprayer that produced a "very fine" spray droplet size with a high potential for drift. Los Amigos Harvesting operated the spray rig in a N/NE to S/SW pattern while applying the pesticides, resulting in pesticides from the air delivery sprayer being discharged in the direction of Coastal Berry - North site 1A Bronson Ranch where an FMG harvest crew was working. The applied pesticides moved off-target and contaminated nontarget property Coastal Berry - North site 21A Bronson Ranch, preventing normal use of said property by causing raspberry harvest activities to be discontinued and subjecting FMG employees to pesticide drift and resultant illness symptoms. Foliar samples taken from Coastal Berry - North site 21A Bronson Ranch where the FMG employees had been working were tested for pyraclostrobin, boscalid and myclobutanil, the active ingredients in Pristine Fungicide and Rally WSP, and came back positive for said active ingredients. Los Amigos Harvesting therefore applied pesticides in a way that created a reasonable possibility of contamination of a nontarget private property, including the creation of a health hazard, preventing normal use of such property.

**Penalty**

This violation is considered a "Class A" violation. According to Section 6130 of the California Code of Regulations, Title 3, violations are designated as "Class A", "Class B", and "Class C." A "Class A" violation is a violation of a law or regulation that caused a health, property or environmental hazard. The fine range for a "Class A" violation is $700.00 to $5,000.00. Having considered the respondent's compliance history in light of its recent initiation of operations, due to the nature of the violation, including the potential effects the violation had on the twenty-four (24) people who were subject to potential exposure by multiple pesticides, the severity of the actual effects the violation had on the fifteen (15) people who were exposed to multiple pesticides and suffered symptoms and medical conditions consistent with pesticide exposure; and the increased severity of the actual effects the violation had on the eight (8) people who were exposed to multiple pesticides and suffered

acute symptoms and medical conditions from same which necessitated the need for professional medical care and attention, the Agricultural Commissioner proposes to fine you $5,000.00 for the above described violation.

**Violation 3**

*3 CCR section 6600(b)*

California Code of Regulations Title 3, section 6600(b) states, in pertinent part:

"Each person performing pest control shall… (b) Perform all pest control in a careful and effective manner…"

Los Amigos Harvesting applied the pesticides Pristine Fungicide, Rally 40WSP, DiPel DF and Widespread Max with an air delivery spray rig in close proximity to Coastal Berry - North site 1A Bronson Ranch where an FMG harvest crew was working. Prior to spraying the pesticides, the Los Amigos Harvesting applicator asked FMG employees how long they planned to be harvesting raspberries at Coastal Berry - North site 21A Bronson Ranch, and told them he was going to make a pesticide application but would stay a safe distance away and that they should signal him if they smelled the pesticides, thereby acknowledging the potential for the pesticide application to impact the field workers. Los Amigos Harvesting did not wait for FMG employees to finish harvest activities and leave the area prior to making the pesticide application. The off-target movement of the applied pesticides created an actual health hazard for FMG employees harvesting raspberries at Coastal Berry - North site 21A Bronson Ranch. Los Amigos Harvesting therefore did not perform all pest control in a careful and effective manner.

**Penalty**

This violation is considered a "Class A" violation. According to Section 6130 of the California Code of Regulations, Title 3, violations are designated as "Class A", "Class B", and "Class C." A "Class A" violation is a violation of a law or regulation that caused a health, property or environmental hazard. The fine range for a "Class A" violation is $700.00 to $5,000.00. Having considered the respondent's compliance history in light of its recent initiation of operations, due to the nature of the violation, including the potential effects the violation had on the twenty-four (24) people who were subject to potential exposure by multiple pesticides, the severity of the actual effects the violation had on the fifteen (15) people who were exposed to multiple pesticides and suffered symptoms and medical conditions consistent with pesticide exposure; and the increased severity of the actual effects the violation had on the eight (8) people who were exposed to multiple pesticides and suffered acute symptoms and medical conditions from same which necessitated the need for professional medical care and attention, the Agricultural Commissioner proposes to fine you $5,000.00 for the above described violation.

**Violation 4**

*FAC section 12973*

California Food and Agricultural Code section 12973 states, in pertinent part:

"The use of any pesticide shall not conflict with the labeling registered pursuant to this chapter…"

The Pristine Fungicide, Rally 40WSP and DiPel DF labels state:

"Do not apply this product in a way that will contact workers or other persons, either directly or through drift."

Los Amigos Harvesting applied pesticides Pristine Fungicide, Rally 40WSP, DiPel DF and Widespread Max with an air delivery spray rig in close proximity to Coastal Berry - North site 1A Bronson Ranch where an FMG

harvest crew was working. Los Amigos Harvesting applied the pesticides with a tractor-hitched air delivery sprayer that produced a "very fine" spray droplet size with a high potential for drift. Los Amigos Harvesting operated the spray rig in a N/NE to S/SW pattern while applying the pesticides, resulting in pesticides from the air delivery sprayer being discharged in the direction of Coastal Berry - North site 1A Bronson Ranch where an FMG harvest crew was working. The applied pesticides moved off-target subjecting FMG employees to pesticide drift and resultant illness symptoms, with eight (8) of said employees obtaining professional medical care for acute symptoms of pesticide exposure. All eight (8) of the employees that received professional medical care for pesticide exposure reported seeing the pesticide application mist and experienced a strong/bad odor, and one (1) of these employees reported pesticide contaminating her skin and clothes and saw the surface of the harvesting trailer's table top wet with pesticide. Foliar samples taken from Coastal Berry - North site 21A Bronson Ranch where the FMG employees had been working were tested for pyraclostrobin, boscalid and myclobutanil, the active ingredients in Pristine Fungicide and Rally WSP, and came back positive for said active ingredients. Los Amigos Harvesting therefore applied Pristine Fungicide, Rally 40WSP, and DiPel DF in a way that contacted persons through drift in violation of the pesticide labels and California law.

**Penalty**

This violation is considered a "Class A" violation. According to Section 6130 of the California Code of Regulations, Title 3, violations are designated as "Class A", "Class B", and "Class C." A "Class A" violation is a violation of a law or regulation that caused a health, property or environmental hazard. The fine range for a "Class A" violation is $700.00 to $5,000.00. Having considered the respondent's compliance history in light of its recent initiation of operations, due to the nature of the violation, including the potential effects the violation had on the twenty-four (24) people who were subject to potential exposure by multiple pesticides, the severity of the actual effects the violation had on the fifteen (15) people who were exposed to multiple pesticides and suffered symptoms and medical conditions consistent with pesticide exposure; and the increased severity of the actual effects the violation had on the eight (8) people who were exposed to multiple pesticides and suffered acute symptoms and medical conditions from same which necessitated the need for professional medical care and attention, the Agricultural Commissioner proposes to fine you $5,000.00 for the above described violation.

**Violation 5**

*FAC section 11701*

California Food and Agricultural Code section 11701 states:

"It is unlawful for a person to advertise, solicit, or operate as a pest control business, unless the person has a valid pest control business license issued by the director."

The requirements for obtaining a pest control business license mitigate the risk of adverse health, property, or environmental effects by ensuring the business' pest control activities are supervised by a Qualified Applicator Licensee (QAL). The QAL is knowledgeable of California's pesticide use laws and regulations, supervises pesticide applications made by the licensed pest control business, and is responsible for its safe and legal pesticide use operations. Los Amigos Harvesting provided primary direction and control over the pesticide use related work, services or activities of their employee pesticide handler and was therefore operating as a pest control business without first obtaining a valid pest control business license.

**Penalty**

This violation is considered a "Class B" violation. According to Section 6130 of the California Code of Regulations, Title 3, violations are designated as "Class A", "Class B", and "Class C." A "Class B" violation is a violation of a law or regulation that mitigates the risk of adverse health, property, or environmental effects that

is not designated as a "Class A." The fine range for a "Class B" violation is $250.00 to $1,000.00. Having considered the respondent's compliance history in light of its recent initiation of operations, due to the nature of the violation, including the potential effects the violation had on the twenty-four (24) people who were subject to potential exposure by multiple pesticides, the severity of the actual effects the violation had on the fifteen (15) people who were exposed to multiple pesticides and suffered symptoms and medical conditions consistent with pesticide exposure; and the increased severity of the actual effects the violation had on the eight (8) people who were exposed to multiple pesticides and suffered acute symptoms and medical conditions from same which necessitated the need for professional medical care and attention, the Agricultural Commissioner proposes to fine you $1,000.00 for the above described violation.

**Penalty Summary**

The Agricultural Commissioner proposes to fine you a total of $56,000.00 for the violations described above.

If you have any questions regarding this matter, please contact David Sanford, Deputy Agricultural Commissioner, at (831) 763-8080

Juan Hidalgo
Agricultural Commissioner/Sealer
County of Santa Cruz
175 Westridge Drive
Watsonville, CA 95076
(831) 763-8080

6/1/18
Date

**You May Review the Evidence Against You**
You are entitled to review the Commissioner's evidence supporting these charges. A copy of the written evidence supporting these charges is enclosed for your convenience.

**You May Request a Hearing and Present Evidence at the Hearing**
You may request a hearing to review the Commissioner's evidence, and to present any evidence, oral or written, on your behalf as to why the Commissioner should not take the proposed action. You are not required to be represented by legal counsel at the hearing. Your attorney may accompany you and represent you if you wish. You will be provided a written decision of the Commissioner's finding. Although not required by the authorizing statute, a tape-recording will be made of the hearing proceedings.

**How to Request a Hearing – Failure to Request – FAC Section 12999.5**
Any hearing in this matter will be scheduled and held at the office of the County Agricultural Commissioner, located at 175 Westridge Drive, Watsonville, CA 95076, if you request a hearing by signing, dating and returning the enclosed Hearing Request within 20 days of receipt of the Notice of Proposed Action. Failure to timely request a hearing is a waiver of the right to a hearing. The Commissioner may take the action proposed in this notice without a hearing. Further, failure to request a hearing is a waiver of your right to appeal the Commissioner's decision.

**Stipulation and Waiver to Order – FAC Section 12999.5**
If you do not wish to request a hearing to contest the charges and proposed action, you may stipulate (agree) to the enclosed Order by dating, signing, and returning the enclosed Stipulation and Waiver to Order within 20 days of receipt of this notice.

**Appeal Rights After Hearing – FAC Section 12999.5**
Should you disagree with the Commissioner's decision after requesting and appearing at a hearing, you may request an appeal to the Director of the Department of Pesticide Regulation within 30 days of receiving the Commissioner's decision and order. However, you waive these appeal rights if you do not request and attend the hearing at the scheduled time and date, or if you fail to request an appeal within the 30-day time frame.

The request for appeal must be mailed to the Director of the Department of Pesticide Regulation, 1001 I Street, P.O. Box 4015, Sacramento, California 95812-4015.

The request for appeal:

1. Must be in writing and signed by you or your authorized agent; and
2. Must state the grounds for the appeal; and
3. Must include a copy of the Commissioner's Decision and Order; and
4. Must (sec 12999.5(d), et seq) be filed or mailed to the Commissioner at the same time you mail it to the Director.

Failure to follow any of the above requirements may affect your right to appeal.

If the Director grants an appeal, you will receive the Director's written decision approximately 45 days after receipt of your appeal, or as soon thereafter as practical.

**Pesticide Incident Reimbursement Notice – FAC Section 12997.5**
In addition to any penalties paid in connection with an enforcement action taken pursuant to Sections 12996, 12997, 12999, and 12999.5, any person who is found in violation of any provision of this division related to pesticides or any regulation related to pesticides adopted pursuant to this division that results in illness or injury requiring emergency medical transport or immediate medical treatment of any individual in a nonoccupational setting from any pesticide used in the production of an agricultural commodity, shall be liable to the individual harmed or to the medical provider for the immediate costs of uncompensated medical care from acute injuries and illnesses of the exposed individual.

## ENCLOSURES

A copy of the text of 3 CCR, section 6130, and California FAC section 12999.5 are enclosed for your convenience.

A copy of Pesticide Illness Priority Investigation Report #49-SCR-17 with attachments. (**Please note that this report includes documents containing protected health information. These documents are not public records and may not be disclosed outside of a legal or administrative process that directly concerns the subject of this report.**)

A copy of the pamphlet "Preparing for Your Administrative Hearing" has been enclosed in order to assist you should you choose to request a hearing.

A copy of the California Department of Pesticide Regulation informational handout "Reimbursing Medical Costs of Persons Injured in Pesticide Incidents" has been enclosed for your information.

# COUNTY OF SANTA CRUZ

OFFICE OF THE AGRICULTURAL COMMISSIONER
**Juan Hidalgo**
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

## ORDER

**FILE NO. 44171803**

TO: LOS AMIGOS HARVESTING
Farm Labor Contractor License Number: FLC000234426
Attn: Patti Garrett
401 Hames Road
Watsonville, CA 95076

**ORDER:** It is hereby ordered that LOS AMIGOS HARVESTING is fined $56,000.00. The fine is due now and payable.

Juan Hidalgo
Agricultural Commissioner/Sealer
175 Westridge Drive
Watsonville, CA 95076
(831)763-8080

**Instructions to Respondent:**
If you wish to pay the fine and not request (waive) a hearing, you may sign the Stipulation and Waiver to Order below. By doing so, you also waive your right to an appeal or any other review in this matter. If you wish to sign the Stipulation and Waiver to Order, you must submit it to the Agricultural Commissioner within 20 days of receipt of this notice.

## STIPULATION AND WAIVER TO ORDER

I hereby stipulate that the Agricultural Commissioner's Notice of Proposed Action in the above-entitled matter states grounds for civil penalty action based on the evidence now before the Commissioner.

Without admitting to the violations alleged in the Notice of Proposed Action, I stipulate to the Commissioner's Order, as set forth above, and I waive all rights to a hearing and appeal or any other review in this matter.

_____ _____
Respondent's Signature Date

Make the check payable to: "County of Santa Cruz". Mail the check and signed **Stipulation and Waiver to Order** to:

Juan Hidalgo
Agricultural Commissioner/Sealer
175 Westridge Drive
Watsonville, CA 95076

# COUNTY OF SANTA CRUZ

OFFICE OF THE AGRICULTURAL COMMISSIONER
**Juan Hidalgo**
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

## HEARING REQUEST

## ACKNOWLEDGEMENT OF RECEIPT OF PROPOSED NOTICE OF ACTION AND REQUEST FOR HEARING

**FILE NO. 44171803**

TO: LOS AMIGOS HARVESTING
Farm Labor Contractor License Number: FLC000234426
Attn: Patti Garrett
401 Hames Road
Watsonville, CA 95076

I, the undersigned respondent in this proceeding, hereby acknowledge receipt of a copy of the Notice of Proposed Action.

I hereby request a hearing to permit me to have an opportunity to present my defense to the violations contained in the Notice of Proposed Action.

_____ _____
Respondent's Signature Date

_____
Respondent's Name (printed)

_____
Telephone

Mail this form to: Juan Hidalgo
Agricultural Commissioner/Sealer
175 Westridge Drive
Watsonville, CA 95076

# Exhibit C

# COUNTY OF SANTA CRUZ

OFFICE OF THE AGRICULTURAL COMMISSIONER
**Juan Hidalgo**
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

June 1, 2018

NOTICE OF PROPOSED ACTION,
NATURE OF VIOLATION, AND
RIGHT TO REQUEST HEARING

FILE NO. 44171804

TO: FMG FARM CONTRACTOR, INC.
Farm Labor Contractor License Number: FLC000185517
Attn: Francisco Mora Gonzales
800 5th Street, Suite 5
Gonzales, CA 93926

You are hereby notified that the Agricultural Commissioner for the County of Santa Cruz proposes that you be fined the amount of $1,250.00 as a civil penalty for violating California's pesticide law(s) as explained below. The authority for this action is granted to the County Agricultural Commissioner pursuant to the provisions of Section 12999.5 of the Food and Agricultural Code (FAC). The amount of this fine was determined by applying the circumstances of the violations to the fine regulations adopted for use in these actions. These regulations are found in Title 3, California Code of Regulations (3 CCR), section 6130, a copy of which is enclosed with this Notice of Proposed Action.

## FACTUAL CIRCUMSTANCES

On June 29, 2017, between approximately 7:30 a.m. and 8:30 a.m., Los Amigos Harvesting applied Pristine Fungicide (EPA Reg. No. 7969-199, active ingredients pyraclostrobin and boscalid), Rally 40WSP (EPA Reg. No. 62719-410, active ingredient myclobutanil), DiPel DF (EPA Reg. No. 73049-39, active ingredient Bacillus thuringiensis) and Widespread Max (CA Reg. No. 34704-50061, active ingredient polyether-polymethylsiloxane-copolymer polyether) to treat a raspberry field (Garrett Farms site 1A Nugent Ranch) using a tractor-driven air delivery spray rig. Garrett Farms site 1A Nugent Ranch is located approximately 48 feet southeast of another raspberry field (Coastal Berry - North site 21A Bronson Ranch) where field worker employees of FMG Farm Contractor, Inc. (FMG) were harvesting. Prior to starting to spray the pesticides, the Los Amigos Farms applicator asked FMG employees how long they planned to be harvesting raspberries at Coastal Berry - North site 21A Bronson Ranch, and told them he was going to make a pesticide application but would stay a safe distance away and that they should signal him if they smelled the pesticides.

Shortly after Los Amigos Harvesting began spraying, multiple FMG employees working in Coastal Berry - North site 21A Bronson Ranch began to experience symptoms of acute illness. Of the twenty-four (24) FMG

employees working at the site, fifteen (15) of these employees experienced one or more symptoms including nausea, vomiting, stomachache, headache, dizziness, difficulty breathing, high temperature, dry mouth, a bad taste in their mouth, and throat, eye and skin irritation. 9-1-1 emergency services was called by an FMG field crew supervisor at the site. Five (5) FMG employees exhibiting acute symptoms of pesticide exposure were decontaminated onsite by first responders (Watsonville Fire Department) and transported to Watsonville Community Hospital by ambulance; one (1) FMG employee sought medical care for acute symptoms of pesticide exposure at the same hospital later the same day; and two (2) additional FMG employees obtained professional medical care for acute symptoms of pesticide exposure at a local clinic the following day. The diagnoses/medical impressions of the professional medical providers attending to the eight (8) FMG employees were that the illness symptoms were caused by exposure to pesticide.

Foliar samples taken from Coastal Berry - North site 21A Bronson Ranch where the FMG employees had been harvesting tested positive for pyraclostrobin, boscalid and myclobutanil. During the course of the investigation it was found that in addition to the eight (8) employees that received medical care, five (5) other FMG employees at the referenced site had informed their foreperson of illness symptoms but FMG failed to ensure these employees were taken to a physician. FMG Farm Contractor, Inc. is found in violation of two (2) of California's pesticide laws and regulations, as cited below:

**Violation 1**

*3 CCR section 6766(c)*

California Code of Regulations Title 3, section 6766(c) states, in pertinent part:

"When there are reasonable grounds to suspect that an employee has a pesticide illness, or when an exposure to a pesticide has occurred that might reasonably be expected to lead to an employee's illness, the employer shall ensure that the employee is taken to a physician immediately."

Twenty-four (24) FMG employees working in Coastal Berry – North site 21A Bronson Ranch were reasonably exposed to the pesticides applied by Los Amigos Harvesting on Garrett Farms site 1A Nugent Ranch on June 29, 2017. Of the twenty-four (24) FMG employees working at the site, fifteen (15) of these employees experienced one or more symptoms including nausea, vomiting, stomachache, headache, dizziness, difficulty breathing, high temperature, dry mouth, a bad taste in their mouth, and throat, eye and skin irritation. Eight (8) FMG employees required and received professional medical care as a result of the pesticide exposure. Another five (5) FMG employees had informed their foreperson of illness symptoms but FMG failed to ensure these employees were taken to a physician.

**Penalty**

Having considered the respondent's compliance history, due to the nature of the violation, and taking into account that there were reasonable grounds to suspect that an employee may become ill due to the exposure to pesticides, the Agricultural Commissioner proposes to fine you $1,000.00 for the above described violation. According to Section 6130 of the California Code of Regulations, Title 3, violations are designated as "Class A", "Class B", and "Class C." This violation is considered a "Class B" violation. A "Class B" violation is a violation of a law or regulation that mitigates the risk of adverse health, property, or environmental effects that is not designated as a "Class A."

The fine range for a "Class B" violation is $250.00 to $1,000.00. This fine for violating 3 CCR 6766(c) is set at the top of the fine range because five (5) FMG employees reported feeling sick to the FMG foreperson and FMG failed to ensure that these employees were taken to a physician when there were reasonable grounds to

suspect that an employee may become ill. Ensuring that ill employees or employees that may be expected to become ill due to a pesticide exposure are taken to a physician immediately mitigates health effects that may lead to further injury to the employee.

**Violation 2**

*3 CCR section 6764(a)*

California Code of Regulations Title 3, section 6764(a) states, in pertinent part:

"The employer shall assure that each employee assigned to work in a treated field has been trained within the last 12 months, in a manner the employee understands, before beginning work in the treated field."

During the investigation of the exposure incident on June 29, 2018, it was discovered through employee interviews and training documents that two (2) FMG employees had not received requisite training in the prior 12-month period.

**Penalty**

The Agricultural Commissioner proposes to fine you $250.00 for the above described violation. According to Section 6130 of the California Code of Regulations, Title 3, violations are designated as "Class A", "Class B", and "Class C." This violation is considered a "Class B" violation. A "Class B" violation is a violation of a law or regulation that mitigates the risk of adverse health, property, or environmental effects that is not designated as a "Class A."

The fine range for a "Class B" violation is $250.00 to $1,000.00. The fine for this violation of 3 CCR 6764(a) is set at the bottom of the fine range at $250.00 because whereas the majority of the FMG employees working on the morning of June 29, 2017, at treated field Coastal Berry - North site 21A Bronson Ranch had received the required training in the prior 12-month period, two (2) of said employees had not received the required training. Referenced required training includes pesticide exposure safety information which mitigates the risk of adverse health effects for employees that may be exposed to pesticides.

**Penalty Summary**

The Agricultural Commissioner proposes to fine you a total of $1,250.00 for the violations described above.

If you have any questions regarding this matter, please contact David Sanford, Deputy Agricultural Commissioner, at (831) 763-8080

Juan Hidalgo
Agricultural Commissioner/Sealer
County of Santa Cruz
175 Westridge Drive
Watsonville, CA 95076
(831) 763-8080

6/1/18
Date

**You May Review the Evidence Against You**
You are entitled to review the Commissioner's evidence supporting these charges. A copy of the written evidence supporting these charges is enclosed for your convenience.

**You May Request a Hearing and Present Evidence at the Hearing**
You may request a hearing to review the Commissioner's evidence, and to present any evidence, oral or written, on your behalf as to why the Commissioner should not take the proposed action. You are not required to be represented by legal counsel at the hearing. Your attorney may accompany you and represent you if you wish. You will be provided a written decision of the Commissioner's finding. Although not required by the authorizing statute, a tape-recording will be made of the hearing proceedings.

**How to Request a Hearing – Failure to Request – FAC Section 12999.5**
Any hearing in this matter will be scheduled and held at the office of the County Agricultural Commissioner, located at 175 Westridge Drive, Watsonville, CA 95076, if you request a hearing by signing, dating and returning the enclosed Hearing Request within 20 days of receipt of the Notice of Proposed Action. Failure to timely request a hearing is a waiver of the right to a hearing. The Commissioner may take the action proposed in this notice without a hearing. Further, failure to request a hearing is a waiver of your right to appeal the Commissioner's decision.

**Stipulation and Waiver to Order – FAC Section 12999.5**
If you do not wish to request a hearing to contest the charges and proposed action, you may stipulate (agree) to the enclosed Order by dating, signing, and returning the enclosed Stipulation and Waiver to Order within 20 days of receipt of this notice.

**Appeal Rights After Hearing – FAC Section 12999.5**
Should you disagree with the Commissioner's decision after requesting and appearing at a hearing, you may request an appeal to the Director of the Department of Pesticide Regulation within 30 days of receiving the Commissioner's decision and order. However, you waive these appeal rights if you do not request and attend the hearing at the scheduled time and date, or if you fail to request an appeal within the 30-day time frame.

The request for appeal must be mailed to the Director of the Department of Pesticide Regulation, 1001 I Street, P.O. Box 4015, Sacramento, California 95812-4015.

The request for appeal:

1. Must be in writing and signed by you or your authorized agent; and
2. Must state the grounds for the appeal; and
3. Must include a copy of the Commissioner's Decision and Order; and
4. Must (sec 12999.5(d), et seq) be filed or mailed to the Commissioner at the same time you mail it to the Director.

Failure to follow any of the above requirements may affect your right to appeal.

If the Director grants an appeal, you will receive the Director's written decision approximately 45 days after receipt of your appeal, or as soon thereafter as practical.

## ENCLOSURES

A copy of the text of 3 CCR, section 6130, and California FAC section 12999.5 are enclosed for your convenience.

A copy of Pesticide Illness Priority Investigation Report #49-SCR-17 with attachments. (**Please note that this report includes documents containing protected health information. These documents are not public records and may not be disclosed outside of a legal or administrative process that directly concerns the subject of this report.)**

A copy of the pamphlet "Preparing for Your Administrative Hearing" has been enclosed in order to assist you should you choose to request a hearing.

# COUNTY OF SANTA CRUZ

OFFICE OF THE AGRICULTURAL COMMISSIONER
**Juan Hidalgo**
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

## ORDER

**FILE NO. 44171804**

TO: FMG FARM CONTRACTOR, INC.
Farm Labor Contractor License Number: FLC000185517
Attn: Francisco Mora Gonzales
800 5th Street, Suite 5
Gonzales, CA 93926

**ORDER:** It is hereby ordered that FMG FARM CONTRACTOR, INC. is fined $1,250.00. The fine is due now and payable.

Juan Hidalgo
Agricultural Commissioner/Sealer
175 Westridge Drive
Watsonville, CA 95076
(831)763-8080

**Instructions to Respondent:**
If you wish to pay the fine and not request (waive) a hearing, you may sign the Stipulation and Waiver to Order below. By doing so, you also waive your right to an appeal or any other review in this matter. If you wish to sign the Stipulation and Waiver to Order, you must submit it to the Agricultural Commissioner within 20 days of receipt of this notice.

## STIPULATION AND WAIVER TO ORDER

I hereby stipulate that the Agricultural Commissioner's Notice of Proposed Action in the above-entitled matter states grounds for civil penalty action based on the evidence now before the Commissioner.

Without admitting to the violations alleged in the Notice of Proposed Action, I stipulate to the Commissioner's Order, as set forth above, and I waive all rights to a hearing and appeal or any other review in this matter.

Respondent's Signature _____ Date _____

Make the check payable to: "County of Santa Cruz". Mail the check and signed **Stipulation and Waiver to Order** to:

Juan Hidalgo
Agricultural Commissioner/Sealer
175 Westridge Drive
Watsonville, CA 95076

# COUNTY OF SANTA CRUZ

OFFICE OF THE AGRICULTURAL COMMISSIONER
**Juan Hidalgo**
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

## HEARING REQUEST

## ACKNOWLEDGEMENT OF RECEIPT OF PROPOSED NOTICE OF ACTION AND REQUEST FOR HEARING

**FILE NO. 44171804**

TO: FMG FARM CONTRACTOR, INC.
Farm Labor Contractor License Number: FLC000185517
Attn: Francisco Mora Gonzales
800 5th Street, Suite 5
Gonzales, CA 93926

I, the undersigned respondent in this proceeding, hereby acknowledge receipt of a copy of the Notice of Proposed Action.

I hereby request a hearing to permit me to have an opportunity to present my defense to the violations contained in the Notice of Proposed Action.

_____ _____
Respondent's Signature Date

_____
Respondent's Name (printed)

_____
Telephone

Mail this form to: Juan Hidalgo
Agricultural Commissioner/Sealer
175 Westridge Drive
Watsonville, CA 95076

# Exhibit D

STATE OF CALIFORNIA

# PESTICIDE EPISODE INVESTIGATION REPORT

PR-ENF-127 (REV 8/07) PAGE 1 OF 1

DEPARTMENT OF PESTICIDE REGULATION
ENFORCEMENT BRANCH



## A. GENERAL INFORMATION

| RECEIVED BY | RECEIVED FROM | REPRESENTING | DATE/TIME RECEIVED | PERSON NOTIFIED | DATE |
|---|---|---|---|---|---|
| ita Cruz CAC | Public | Unknown | 6/29/17 0845 ☒ AM ☐ PM | DFA | |
| | | | | DFG | |
| | | | | DPH | |
| | | | | DIR | |
| | | | | EPA | |
| | | | | CAC | |
| | | | | OTHER | |

TYPE OF EPISODE: ☒ HUMAN EFFECTS # 8 ☐ ENVIRONMENTAL EFFECTS ☐ PROPERTY LOSS $ ☐ OTHER

PRIORITY INVESTIGATION: ☒ YES # 49-SCR-17 ☐ NO

| OTHER I.D. NO. | COUNTY OF OCCURRENCE | DATE OF OCCURRENCE | TIME |
|---|---|---|---|
| CAC #17-07 | Santa Cruz | MO 6 DAY 29 YR 17 | 0800 ☒ AM ☐ PM |

EPISODE LOCATION: East Lake and Wagner Aves., Watsonville, California

## B. INJURED/COMPLAINANT INFORMATION

COMPLAINT SIGNED: ☐ YES ☐ NO ☒ N/A

DOCTOR VISITED: ☒ YES ☐ NO ☐ N/A

EXTENT OF INJURY/ILLNESS: ☐ Fatal ☐ Serious ☒ Symptoms ☐ Exposed Only

ACTIVITY OF PERSON EXPOSED/INVOLVED: ☐ Mixer/Loader ☐ Applicator ☒ Field worker* ☐ Public* ☐ Other* *Explain berry harvest

| [redacted] | AGE | SEX | WHS NUMBER | WORKDAYS LOST |
|---|---|---|---|---|
| | [redacted] | [redacted] | [redacted] | see report |

ADDRESS (Number and Street, City, State, ZIP Code): [redacted]

| MEDICAL FACILITY NAME | | HOSPITALIZED | DATE/TIME ADMITTED | DATE/TIME DISCHARGED |
|---|---|---|---|---|
| Watsonville Community Hospital | ☒ TREATMENT PROVIDED ☐ OBSERVATION ONLY | ☐ YES ☒ NO | 6/29/17 at 0919 hrs | 6/29/17 at 1046 hrs |

| PHYSICIAN | ADDRESS (Number and Street, City, State, ZIP Code) | PHONE |
|---|---|---|
| see report | n/a | n/a |

SIGNS/SYMPTOMS EXPERIENCED: nausea, vomiting

| EMPLOYER | ADDRESS (Number and Street, City, State, ZIP Code) | PHONE |
|---|---|---|
| FMG Farm Contractor, Inc. | 800 5th Street, Gonzales, CA, 93926 | 831-675-0007 |

PROTECTIVE MEASURES USED

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| ☐ Safety Glasses | ☐ Cloth/Leather Gloves | ☐ Dust Mask | ☒ Work Clothes | ☐ Closed System |
| ☐ Goggles | ☐ Chemical Resistant Gloves | ☐ 1/2 Face Respirator | ☐ Coveralls | ☐ Enclosed Cab |
| ☐ Faceshield | ☐ Other | ☐ Full Face Respirator | ☐ Chemical Resistant Clothes | ☐ Enclosed Cab w/Air Purification |
| ☐ Eye/Sun Glasses | ☒ None | ☐ SCBA | ☐ Chemical Resistant Boots | ☐ Other |
| ☒ None | | ☒ None | ☐ Head Covering | ☒ None |
| | | | ☐ Other | |

## ENVIRONMENTAL OR PROPERTY DAMAGE

| DESCRIPTION OF DAMAGE | AMOUNT/VALUE |
|---|---|
| n/a | n/a |

| OWNER | ADDRESS (Number and Street, City, State, ZIP Code) | PHONE |
|---|---|---|
| n/a | n/a | n/a |

## D. ALLEGED RESPONDENT(S)

☐ PCA ☐ DEALER ☐ PILOT ☐ GROWER ☐ AGENCY ☒ OTHER Farm Labor Contractor

| NAME | PHONE | LICENSE/PERMIT NUMBER | RECOMMENDATION MADE |
|---|---|---|---|
| Los Amigos Harvesting | 831-768-6944 | FLC000234426 | ☒ YES # 6649 ☐ NO |

| ADDRESS (Number and Street) | EMPLOYER'S NAME | PHONE |
|---|---|---|
| 401 Hames Road | n/a | 831-768-6944 |

| City, State, ZIP Code | EMPLOYER'S ADDRESS (Number and Street) |
|---|---|
| Watsonville, CA, 95076 | n/a |

| *EXPLAIN | City, State, ZIP Code |
|---|---|
| Farm Labor Contractor performing pest control work | n/a |

| PESTICIDE NAME/MANUFACTURER | EPA REGISTRATION NUMBER | CATEGORY | DOSE/DILUTION/VOLUME | TREATMENT DATE | COMMODITY/SITE TREATED |
|---|---|---|---|---|---|
| DiPel / Valent BioSci. | 73049-39 | Caution | 2 lbs./acre | 6/29/17 | Raspberry |
| Pristine Fungicide / BASF | 7969-199 | Caution | 18.5 oz./acre | 6/29/17 | Raspberry |
| Rally 40WSP / Dow AgroSci. | 62719-410 | Caution | 2.5 oz./acre | 6/29/17 | Raspberry |

EQUIPMENT TYPE/MAKE/MODEL/DESCRIPTION: Gearmore P42N1-400G, spray rig with vertical spray nozzles

*SUMMARIZE THE EPISODE INCLUDING A DETAILED DESCRIPTION OF EVIDENCE TAKEN (Use Pesticide Episode Investigation Supplemental Report form PR-ENF-127A if additional space is needed)*

see report

| REPORT PREPARED BY (NAME/TITLE) | DATE PREPARED | REPORT REVIEWED/APPROVED BY (NAME/TITLE) | DATE APPROVED |
|---|---|---|---|
| Shane DeVine / Ag Biologist III | April 26, 2018 | David Sanford / Deputy Ag Commissioner | April 26, 2018 |

STATE OF CALIFORNIA

# EPISODE WITNESS/INJURED/COMPLAINANT REPORT

PR ENF-127B (REV. 8/07)

DEPARTMENT OF PESTICIDE REGULATION
ENFORCEMENT BRANCH



PRIORITY INVESTIGATION: [X] YES # 49-SCR-17 [ ] NO
OTHER I.D. NO.: CAC #17-07
COUNTY OF OCCURRENCE: Santa Cruz
DATE OF OCCURRENCE: MO 6 DAY 29 YR 2017

COMPLAINT SIGNED: [ ] YES [ ] NO [X] N/A
WAS DOCTOR VISITED: [X] YES [ ] NO [ ] N/A
EXTENT OF INJURY/ILLNESS: [ ] Fatal [X] Symptoms [ ] Serious [ ] Exposed Only
ACTIVITY OF PERSON EXPOSED/INVOLVED: [ ] Mixer/Loader [X] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain

## WITNESS/INJURED/COMPLAINANT

[redacted] | AGE [redacted] | SEX [redacted] | WHS NO. [redacted] | NO. OF WORKDAYS LOST: see report

ADDRESS: [redacted] | CITY: [redacted] | ZIP CODE: [redacted] | PHONE: [redacted]

MEDICAL FACILITY NAME: Watsonville Community Hospital | [X] TREATMENT PROVIDED [ ] OBSERVATION ONLY | HOSPITALIZED [ ] YES [X] NO | DATE/TIME ADMITTED: 6/29/17 at 0905 hrs | DATE/TIME DISCHARGED: 6/29/17 at 1223 hrs

PHYSICIAN: see report | ADDRESS: n/a | PHONE: n/a

[X] SIGNS/SYMPTOMS EXPERIENCED: nausea, vomiting, dizziness, sore/itchy throat

EMPLOYER: FMG Farm Contractor, Inc | ADDRESS: 800 5th Street, Gonzales, CA, 93926 | PHONE: 831-675-0007

PROTECTIVE MEASURES USED

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [X] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enclosed Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [X] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [X] None | | [X] None | [ ] Head Covering | [X] None |
| | | | [ ] Other | |

COMPLAINT SIGNED: [ ] YES [ ] NO [X] N/A
WAS DOCTOR VISITED: [X] YES [ ] NO [ ] N/A
EXTENT OF INJURY/ILLNESS: [ ] Fatal [X] Symptoms [ ] Serious [ ] Exposed Only
ACTIVITY OF PERSON EXPOSED/INVOLVED: [ ] Mixer/Loader [X] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain

## WITNESS/INJURED/COMPLAINANT

[redacted] | AGE [redacted] | SEX [redacted] | WHS NO. [redacted] | NO. OF WORKDAYS LOST: see report

ADDRESS: [redacted] | CITY: [redacted] | ZIP CODE: [redacted] | PHONE: [redacted]

MEDICAL FACILITY NAME: WorkWell Clinic | [X] TREATMENT PROVIDED [ ] OBSERVATION ONLY | HOSPITALIZED [ ] YES [X] NO | DATE/TIME ADMITTED: 6/30/17 at 0850 hrs | DATE/TIME DISCHARGED: 6/30/17 unknown time

PHYSICIAN: n/a | ADDRESS: n/a | PHONE: n/a

[X] SIGNS/SYMPTOMS EXPERIENCED: nausea, vomiting, headache, achy, dizziness, eye itchiness and burning, blurred vision, itchy throat, trunk and upper extremities, cough with phlegm and shortness of breath

EMPLOYER: FMG Farm Contractor, Inc. | ADDRESS: 800 5th Street, Gonzales, CA, 93926 | PHONE: 831-675-0007

PROTECTIVE MEASURES USED

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [X] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enclosed Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [X] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [X] None | | [X] None | [ ] Head Covering | [X] None |
| | | | [ ] Other | |

COMPLAINT SIGNED: [ ] YES [ ] NO [X] N/A
WAS DOCTOR VISITED: [X] YES [ ] NO [ ] N/A
EXTENT OF INJURY/ILLNESS: [ ] Fatal [X] Symptoms [ ] Serious [ ] Exposed Only
ACTIVITY OF PERSON EXPOSED/INVOLVED: [ ] Mixer/Loader [X] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain

## WITNESS/INJURED/COMPLAINANT

[redacted] | AGE [redacted] | SEX [redacted] | WHS NO. [redacted] | NO. OF WORKDAYS LOST: see report

ADDRESS: [redacted] | CITY: [redacted] | ZIP CODE: [redacted] | PHONE: [redacted]

MEDICAL FACILITY NAME: Watsonville Community Hospital | [X] TREATMENT PROVIDED [ ] OBSERVATION ONLY | HOSPITALIZED [ ] YES [X] NO | DATE/TIME ADMITTED: 6/29/17 unknown time | DATE/TIME DISCHARGED: 6/29/17 unknown time

PHYSICIAN: n/a | ADDRESS: n/a | PHONE: n/a

[X] SIGNS/SYMPTOMS EXPERIENCED: vomiting

EMPLOYER: FMG Farm Contractor, Inc. | ADDRESS: 800 5th Street, Gonzales, CA, 93926 | PHONE: 831-675-0007

PROTECTIVE MEASURES USED

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [X] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enc. Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [X] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [X] None | | [X] None | [ ] Head Covering | [X] None |
| | | | [ ] Other | |

COMMENTS

e report

| REPORT PREPARED BY (NAME/TITLE) | DATE PREPARED | REPORT REVIEWED/APPROVED BY (NAME/TITLE) | DATE REVIEWED/APPROVED |
|---|---|---|---|
| Shane DeVine / Ag Biologist III | Apr. 26, 2018 | David Sanford / Deputy Ag Commissioner | Apr. 26, 2018 |

STATE OF CALIFORNIA

# EPISODE WITNESS/INJURED/COMPLAINANT REPORT

PR-ENF-127B (REV 8/07)

DEPARTMENT OF PESTICIDE REGULATION
ENFORCEMENT BRANCH



| PRIORITY INVESTIGATION | OTHER I.D. NO. | COUNTY OF OCCURRENCE | DATE OF OCCURRENCE |
|---|---|---|---|
| [X] YES # 49-SCR-17 [ ] NO | CAC #17-07 | Santa Cruz | MO 6 DAY 29 YR 2017 |

## WITNESS/INJURED/COMPLAINANT

| COMPLAINT SIGNED | WAS DOCTOR VISITED | EXTENT OF INJURY/ILLNESS | ACTIVITY OF PERSON EXPOSED/INVOLVED |
|---|---|---|---|
| [ ] YES [ ] NO [X] N/A | [X] YES [ ] NO [ ] N/A | [ ] Fatal [X] Symptoms [ ] Serious [ ] Exposed Only | [ ] Mixer/Loader [X] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain |

| NAME | AGE | SEX | WHS NO | NO. OF WORKDAYS LOST |
|---|---|---|---|---|
| [redacted] | [redacted] | [redacted] | [redacted] | see report |

| ADDRESS | CITY | ZIP CODE | PHONE |
|---|---|---|---|
| [redacted] | [redacted] | [redacted] | [redacted] |

| MEDICAL FACILITY NAME | TREATMENT PROVIDED | HOSPITALIZED | DATE/TIME ADMITTED | DATE/TIME DISCHARGED |
|---|---|---|---|---|
| Watsonville Community Hospital | [X] TREATMENT PROVIDED [ ] OBSERVATION ONLY | [ ] YES [X] NO | 6/29/17 at 0918 hrs | 6/29/17 at 1257 hrs |

| PHYSICIAN | ADDRESS | PHONE |
|---|---|---|
| n/a | n/a | n/a |

SIGNS/SYMPTOMS EXPERIENCED: burning sensation in both eyes

| EMPLOYER | ADDRESS | PHONE |
|---|---|---|
| FMG Farm Contractor, Inc. | 800 5th Street, Gonzales, CA, 93926 | 831-675-0007 |

**PROTECTIVE MEASURES USED**

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [X] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enclosed Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [X] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [X] None | | [X] None | [ ] Head Covering | [X] None |
| | | | [ ] Other | |

## WITNESS/INJURED/COMPLAINANT

| COMPLAINT SIGNED | WAS DOCTOR VISITED | EXTENT OF INJURY/ILLNESS | ACTIVITY OF PERSON EXPOSED/INVOLVED |
|---|---|---|---|
| [ ] YES [ ] NO [X] N/A | [X] YES [ ] NO [ ] N/A | [ ] Fatal [X] Symptoms [ ] Serious [ ] Exposed Only | [ ] Mixer/Loader [X] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain |

| NAME | AGE | SEX | WHS NO | NO. OF WORKDAYS LOST |
|---|---|---|---|---|
| [redacted] | [redacted] | [redacted] | [redacted] | see report |

| ADDRESS | CITY | ZIP CODE | PHONE |
|---|---|---|---|
| [redacted] | [redacted] | [redacted] | [redacted] |

| MEDICAL FACILITY NAME | TREATMENT PROVIDED | HOSPITALIZED | DATE/TIME ADMITTED | DATE/TIME DISCHARGED |
|---|---|---|---|---|
| WorkWell Clinic | [ ] TREATMENT PROVIDED [ ] OBSERVATION ONLY | [ ] YES [X] NO | 6/30/17 unknown time | 6/30/17 unknown time |

| PHYSICIAN | ADDRESS | PHONE |
|---|---|---|
| n/a | n/a | n/a |

SIGNS/SYMPTOMS EXPERIENCED: nausea, headache, throat irritation

| EMPLOYER | ADDRESS | PHONE |
|---|---|---|
| FMG Farm Contractor, Inc. | 800 5th Street, Gonzales, CA, 93926 | 831-675-0007 |

**PROTECTIVE MEASURES USED**

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [X] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enclosed Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [X] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [X] None | | [X] None | [ ] Head Covering | [X] None |
| | | | [ ] Other | |

## WITNESS/INJURED/COMPLAINANT

| COMPLAINT SIGNED | WAS DOCTOR VISITED | EXTENT OF INJURY/ILLNESS | ACTIVITY OF PERSON EXPOSED/INVOLVED |
|---|---|---|---|
| [ ] YES [ ] NO [X] N/A | [X] YES [ ] NO [ ] N/A | [ ] Fatal [X] Symptoms [ ] Serious [ ] Exposed Only | [ ] Mixer/Loader [X] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain |

| NAME | AGE | SEX | WHS NO | NO. OF WORKDAYS LOST |
|---|---|---|---|---|
| [redacted] | [redacted] | [redacted] | [redacted] | see report |

| ADDRESS | CITY | ZIP CODE | PHONE |
|---|---|---|---|
| [redacted] | [redacted] | [redacted] | [redacted] |

| MEDICAL FACILITY NAME | TREATMENT PROVIDED | HOSPITALIZED | DATE/TIME ADMITTED | DATE/TIME DISCHARGED |
|---|---|---|---|---|
| Watsonville Community Hospital | [X] TREATMENT PROVIDED [ ] OBSERVATION ONLY | [ ] YES [X] NO | 6/29/17 at 0906 hrs | 6/29/17 at 1257 hrs |

| PHYSICIAN | ADDRESS | PHONE |
|---|---|---|
| n/a | n/a | n/a |

SIGNS/SYMPTOMS EXPERIENCED: nausea, shortness of breath, burning, sore and itchy throat

| EMPLOYER | ADDRESS | PHONE |
|---|---|---|
| FMG Farm Contractor, Inc. | 800 5th Street, Gonzales, CA, 93926 | 831-675-0007 |

**PROTECTIVE MEASURES USED**

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [X] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enc. Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [X] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [X] None | | [X] None | [ ] Head Covering | [X] None |
| | | | [ ] Other | |

COMMENTS

ɜe report

| REPORT PREPARED BY (NAME/TITLE) | DATE PREPARED | REPORT REVIEWED/APPROVED BY (NAME/TITLE) | DATE REVIEWED/APPROVED |
|---|---|---|---|
| Shane DeVine / Ag Biologist III | Apr. 26, 2018 | David Sanford / Deputy Ag Commissioner | Apr. 26, 2018 |

STATE OF CALIFORNIA

# EPISODE WITNESS/INJURED/COMPLAINANT REPORT

PR-ENF-127B (REV. 8/07)

DEPARTMENT OF PESTICIDE REGULATION
ENFORCEMENT BRANCH



| PRIORITY INVESTIGATION | OTHER I.D. NO. | COUNTY OF OCCURRENCE | DATE OF OCCURRENCE |
|---|---|---|---|
| [X] YES # x48-SCR 17 [ ] NO | CAC #17-07 | Santa Cruz | MO 6 DAY 29 YR 2017 |

## WITNESS/INJURED/COMPLAINANT

| COMPLAINT SIGNED | WAS DOCTOR VISITED | EXTENT OF INJURY/ILLNESS | ACTIVITY OF PERSON EXPOSED/INVOLVED |
|---|---|---|---|
| [ ] YES [ ] NO [X] N/A | [X] YES [ ] NO [ ] N/A | [ ] Fatal [X] Symptoms [ ] Serious [ ] Exposed Only | [ ] Mixer/Loader [X] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain |

| NAME | AGE | SEX | WHS NO | NO. OF WORKDAYS LOST |
|---|---|---|---|---|
| [redacted] | [redacted] | [redacted] | [redacted] | see report |

| ADDRESS | CITY | ZIP CODE | PHONE |
|---|---|---|---|
| [redacted] | [redacted] | [redacted] | [redacted] |

| MEDICAL FACILITY NAME | TREATMENT PROVIDED / OBSERVATION ONLY | HOSPITALIZED | DATE/TIME ADMITTED | DATE/TIME DISCHARGED |
|---|---|---|---|---|
| Watsonville Community Hospital | [X] TREATMENT PROVIDED [ ] OBSERVATION ONLY | [ ] YES [X] NO | 6/29/17 at 0919 hrs | 6/29/17 at 1103 hrs |

| PHYSICIAN | ADDRESS | PHONE |
|---|---|---|
| n/a | n/a | n/a |

[X] SIGNS/SYMPTOMS EXPERIENCED
Nausea, vomiting, sore throat

| EMPLOYER | ADDRESS | PHONE |
|---|---|---|
| FMG Farm Contractor, Inc. | 800 5th Street, Gonzales, CA, 93926 | 831-675-0007 |

[ ] PROTECTIVE MEASURES USED

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [X] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enclosed Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [X] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [X] None | | [X] None | [ ] Head Covering | [X] None |
| | | | [ ] Other | |

## WITNESS/INJURED/COMPLAINANT

| COMPLAINT SIGNED | WAS DOCTOR VISITED | EXTENT OF INJURY/ILLNESS | ACTIVITY OF PERSON EXPOSED/INVOLVED |
|---|---|---|---|
| [ ] YES [ ] NO [X] N/A | [ ] YES [ ] NO [X] N/A | [ ] Fatal [ ] Symptoms [ ] Serious [ ] Exposed Only | [ ] Mixer/Loader [ ] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain |

| NAME | AGE | SEX | WHS NO | NO. OF WORKDAYS LOST |
|---|---|---|---|---|
| n/a | | | | |

| ADDRESS | CITY | ZIP CODE | PHONE |
|---|---|---|---|
| | | | |

| MEDICAL FACILITY NAME | TREATMENT PROVIDED / OBSERVATION ONLY | HOSPITALIZED | DATE/TIME ADMITTED | DATE/TIME DISCHARGED |
|---|---|---|---|---|
| | [ ] TREATMENT PROVIDED [ ] OBSERVATION ONLY | [ ] YES [ ] NO | | |

| PHYSICIAN | ADDRESS | PHONE |
|---|---|---|
| | | |

[ ] SIGNS/SYMPTOMS EXPERIENCED

| EMPLOYER | ADDRESS | PHONE |
|---|---|---|
| | | |

[ ] PROTECTIVE MEASURES USED

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [ ] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enclosed Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [ ] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [ ] None | | [ ] None | [ ] Head Covering | [ ] None |
| | | | [ ] Other | |

## WITNESS/INJURED/COMPLAINANT

| COMPLAINT SIGNED | WAS DOCTOR VISITED | EXTENT OF INJURY/ILLNESS | ACTIVITY OF PERSON EXPOSED/INVOLVED |
|---|---|---|---|
| [ ] YES [ ] NO [X] N/A | [ ] YES [ ] NO [X] N/A | [ ] Fatal [ ] Symptoms [ ] Serious [ ] Exposed Only | [ ] Mixer/Loader [ ] Field Worker* [ ] Other* [ ] Applicator [ ] Public* Explain |

| NAME | AGE | SEX | WHS NO | NO. OF WORKDAYS LOST |
|---|---|---|---|---|
| n/a | | | | |

| ADDRESS | CITY | ZIP CODE | PHONE |
|---|---|---|---|
| | | | |

| MEDICAL FACILITY NAME | TREATMENT PROVIDED / OBSERVATION ONLY | HOSPITALIZED | DATE/TIME ADMITTED | DATE/TIME DISCHARGED |
|---|---|---|---|---|
| | [ ] TREATMENT PROVIDED [ ] OBSERVATION ONLY | [ ] YES [X] NO | | |

| PHYSICIAN | ADDRESS | PHONE |
|---|---|---|
| | | |

[ ] SIGNS/SYMPTOMS EXPERIENCED

| EMPLOYER | ADDRESS | PHONE |
|---|---|---|
| | | |

[ ] PROTECTIVE MEASURES USED

| EYES | HANDS | INHALATION | OTHER | ENGINEERING CONTROLS |
|---|---|---|---|---|
| [ ] Safety Glasses | [ ] Cloth/Leather Gloves | [ ] Dust Mask | [ ] Work Clothes | [ ] Closed System |
| [ ] Goggles | [ ] Chemical Resistant Gloves | [ ] 1/2 Face Respirator | [ ] Coveralls | [ ] Enclosed Cab |
| [ ] Faceshield | [ ] Other | [ ] Full Face Respirator | [ ] Chemical Resistant Clothes | [ ] Enc. Cab w/Air Purification |
| [ ] Eye/Sun Glasses | [ ] None | [ ] SCBA | [ ] Chemical Resistant Boots | [ ] Other |
| [ ] None | | [ ] None | [ ] Head Covering | [ ] None |
| | | | [ ] Other | |

COMMENTS

ee report

| REPORT PREPARED BY (NAME/TITLE) | DATE PREPARED | REPORT REVIEWED/APPROVED BY (NAME/TITLE) | DATE REVIEWED/APPROVED |
|---|---|---|---|
| Shane DeVine / Ag Biologist III | Apr. 26, 2018 | David Sanford / Deputy Ag Commissioner | Apr. 26, 2018 |

# Pesticide Illness Priority Investigation Report
# Coastal Berry - North
# Priority Episode #49-SCR-17
# Santa Cruz County Case #17-07

## Summary

On the morning of June 29, 2017, the Santa Cruz County Agricultural Commissioner's Office was notified of a possible pesticide exposure episode. Investigation of the incident revealed 24 employees of farm labor contractor FMG Farm Contractor, Inc. were harvesting raspberries for Coastal Berry - North when a pesticide application began on a neighboring field operated by Garrett Farms. Fifteen of the 24 employees experienced one or more of the physical symptoms nausea, vomiting, stomachache, headache, dizziness, difficulty breathing, high temperature, dry mouth, a bad taste in their mouth, and throat, eye and skin irritation. As a result of said symptoms, five employees were transported by ambulance to a local hospital immediately following the pesticide exposure incident, another employee arrived by private vehicle at the same hospital that same morning, and two additional employees obtained professional medical care at a local clinic the following day. Environmental sampling performed at the incident site indicates the pesticides applied at Garrett Farms moved off site and into the Coastal Berry - North field where FMG employees were working. Said application was made by an employee under the primary direction and control of farm labor contractor Los Amigos Harvesting. Coastal Berry - North, FMG Farm Contractor, Inc. and Los Amigos Harvesting were found in violation of the California Code of Regulations (CCR) and/or the California Food and Agricultural Code (FAC).

## Violations (referenced regulations and laws comprise Attachments 2 and 3, respectively)

Coastal Berry - North

3 CCR 6626(a)

3 CCR 6723.1(a) and (b)

FMG Farm Contractor, Inc.

3 CCR 6764(a), (b) and (e)

3 CCR 6766(c)

Los Amigos Harvesting

3 CCR 6600(b) and (e)

3 CCR 6614

3 CCR 6626(b)

3 CCR 6702(a) and (b)(3) and (5)

3 CCR 6724(b)

FAC 11701

FAC 11732

FAC 12973

## Witnesses / Contacts

Arellano, Veronica
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Custodian of Medical Records
WorkWell Medical Group
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Resendiz, Jose
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Ruiz, Vanessa
FMG Farm Contractor, Inc.
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Sanford, David
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Stevens, Brian, RN
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Tittle, Morgan
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Yanez, Freddie
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Dole Fresh Foods
480 West Beach Street
Watsonville, CA 95076
(831)345-9917

## Investigation and Statements

On the morning of June 29, 2017, the Santa Cruz County Agricultural Commissioner's Office (CAC) was notified of a possible pesticide exposure incident near the intersection of Wagner and East Lake Avenues in Watsonville, California. At approximately 0910 hours while performing routine surveillance in the field I received a telephone call from the CAC office requesting I

investigate referenced incident. At 0925 hours I arrived on site and observed a large field of hoop houses northwest of referenced intersection. Said field was comprised of numerous individual lots of hoop houses and one lot without hoop houses near the center, all of which appeared to contain raspberry plants. Review of CAC records indicates referenced field was occupied by two different growers: Coastal Berry - North and Garrett Farms, California Restricted Material Permit numbers 44-17-27P192A and 44-17-440168A, respectively (Attachment 4 and 5, respectively). A wide earthen service road running north to south separates the two growers' fields with Coastal Berry - North (also referred to as "Dole Fresh Foods") site 21A Bronson Ranch of 42 acres on the west side of said road, and Garrett Farms site 1A Nugent Ranch of 66.4 acres to the east. Weather on site was overcast with little to no wind.

Moments after my arrival I encountered Jose Ramirez, Authorized Representative for Coastal Berry - North. With J. RAMIREZ were Dole Fresh Foods Caneberry Manager Freddy Yanez and Coastal Berry - North Supervisor David Vasquez. I informed said men I was investigating a possible pesticide exposure incident. In response to my questions, J. RAMIREZ stated the following in summary.

> I just happened to be at our site 21A Bronson Ranch this morning. When I arrived the fire department and ambulances were already here. The fire department was washing down some of the FMG fieldworkers with a hose. FMG Farm Contractor is a farm labor contractor we hire for picking berries. I did not talk directly with employees of FMG or neighboring Garrett Farms nor did I see Garrett Farms making a pesticide application. It was from my staff on site I learned Garrett Farms made a pesticide application in their open raspberry field directly across the service road from where the FMG fieldworkers were working. There is a shade house on the side of the service road and next to our field where FMG employees were stacking their flats of raspberries upon a harvesting trailer. I understand the incident occurred around 8:00 a.m. Five FMG employees were taken to the hospital. Apparently the Garrett Farms applicator was told to stop the application when the fieldworkers started getting sick, but I do not know who told him to stop. FMG employees are no longer on site. One of our employees was washing off one of our application spray rigs this morning, but we did not make a pesticide application today. We made a pesticide application to our site 21A, block #8, yesterday with a start time of 8:15 p.m. and finish time of 9:30 p.m. This morning FMG employees were working in block #7, which is southwest of block #8.

In response to my questions, F. YANEZ stated the following in summary.

> I have been Caneberry Manager for Dole Fresh Foods for the past two years. Coastal Berry - North is one of our local growing operations. Earlier this morning I received a telephone call from David Vasquez, Supervisor with Coastal Berry - North, informing me FMG employees at their site 21A Bronson Ranch had become ill as a result of exposure to a pesticide applied by neighboring Garrett Farms. Approximately 10 minutes later I arrived on site and was provided additional information regarding the incident by Supervisor Vasquez. By this time the pesticide application had stopped and the fire truck and ambulances had already left to take the sick fieldworkers to Watsonville Hospital. I noticed a slight breeze coming from the Garrett Farms ranch toward our Bronson Ranch. I did not know Garrett Farms would be applying pesticides this morning and did not notice if their field was posted with pesticide application signs. The fruit harvested by FMG may

> have been contaminated with pesticide so I had it destroyed. I instructed staff on site not to allow anyone to enter the lot where FMG employees were working until the restricted entry intervals for the materials applied had expired.

Spanish speaking D. VASQUEZ was not interviewed at this time but interviewed later on July 5, 2017 (see below).

After speaking with Coastal Berry - North and Dole Fresh Foods personnel I drove north along the service road that separates Coastal Berry - North and Garrett Farms and saw no FMG employees or a pesticide application. I drove through the Garrett Farms field and at approximately 0945 hours arrived at their business office near the southeast end of the field, informed office personnel of my investigation and was referred to Garrett Farms Authorized Representative Morgan Tittle. At 0950 hours I telephoned M. TITTLE who in response to my questions stated the following in summary.

> I was not at our site 1A Nugent Ranch this morning but spoke with our onsite Supervisor Jose Resendiz who said a pesticide application was made to our open field of raspberries, that is Driscoll Lot #9863. Prior to making the application our employee pesticide handler Melchor Galvan spoke with fieldworkers in the neighboring Coastal Berry - North field and informed them he would be making a pesticide application. After the fieldworkers moved to the other side of their field, further away from our site 1A, pesticide handler Galvan began the application starting 15 rows, approximately 30 feet, back away from the service road that separates our field from that of Coastal Berry - North. The rows in that open raspberry field run parallel to the service road. The application started at 8:00 a.m. and lasted only 5 minutes or so before Supervisor Resendiz received a call from Coastal Berry - North indicating their fieldworkers in the neighboring field were getting sick. Immediately thereafter Supervisor Resendiz proceeded to the application area and instructed pesticide handler Galvan to stop the application. The pesticides applied this morning were DiPel DF, Pristine Fungicide, Rally 40WSP, and Widespread Max. I will e-mail to you the application recommendation that lists the pesticides and their EPA Registration Numbers.

Records indicate M. TITTLE has valid Private Applicator Certificate #PA-SCR-0884, issued by the Santa Cruz CAC, with expiration date December 31, 2017.

After my telephone conversation with M. TITTLE I continued to drive through Garrett Farms site 1A looking for evidence of a pesticide application. Just north of the open raspberry field I observed a pesticide application rig parked across a service road between two lots of Garrett Farms hoop houses. A wooden post at the west end of said service road had the markings "A13B" (Attachment 26, photo #6). This service road is perpendicular to the larger service road that separates the Coastal Berry - North and Garrett Farms ranches. Said rig was unattended and no pesticide containers were observed in the vicinity. After taking photographs of said rig (Attachment 26, photos 2, 3 and 4), I proceeded back to the area of the purported pesticide exposure incident and began taking photographs of same (Attachment 26, photos 1, 8, 10, 11, and 12). Santa Cruz County Agricultural Commissioner Juan Hidalgo was informed of the possible pesticide exposure incident and arrived on site. After briefing J. HIDALGO on my investigative findings, we proceeded to the Coastal Berry - North equipment yard at the south end of their site 21A. Coastal Berry - North employees at said yard indicated they had no knowledge of the purported pesticide exposure incident. J. HIDALGO and I then proceeded north along a service

road that bisects Coastal Berry - North site 21A whereupon we encountered fieldworkers harvesting raspberries in a lot to the west of said road. Speaking in Spanish, J. HIDALGO interviewed the crew foreman Mr. Hilario Ramirez who stated they were Coastal Berry - North employees and they had no knowledge of the purported pesticide exposure incident. J. HIDALGO and I then proceeded to Watsonville Community Hospital, Watsonville, California where FMG employees were taken that were exhibiting physical symptoms of pesticide exposure reportedly as a result of referenced incident.

Upon arrival at Watsonville Community Hospital Emergency Room (ER) J. HIDALGO and I spoke with Mr. Brian Stevens, RN, Director of ER Nursing. B. STEVENS indicated six individuals were seen at the ER that morning complaining of pesticide exposure. All six were part of the purported pesticide exposure incident under investigation. Five of the individuals arrived by ambulance and one by some other means. Of the six individuals, three were still at the ER: [redacted] J. HIDALGO, speaking in Spanish, obtained a statement and signed Medical Information Authorization form from [redacted] while I did the same with both [redacted] and [redacted] Summaries of statements made by [redacted] and [redacted] appear hereinafter.

Upon return to the CAC office, J. HIDALGO and I concurred the purported pesticide exposure incident warranted environmental sampling. Environmental Specialist Francisco Leon of the California Department of Pesticide Regulation (DPR) was consulted regarding environmental sampling and a raspberry plant foliar 'five point gradient' sampling plan was deemed most applicable. Said sampling plan is defined in DPR's *Pesticide Use Enforcement Program Standards Compendium, Volume #5, Investigation Procedures.*

On this same date, Agricultural Biologist Alberto Vinuela and I gathered all necessary sampling equipment and supplies and proceeded to Coastal Berry - North site 21A to execute referenced sampling plan. Once on site, calculations were made to establish individual sampling points at specific distances along a transect orientated longitudinally between neighboring raspberry plant rows identified as "5B" and "A6" at Coastal Berry - North site 21A, and projecting through the shade house, across the service road and into the Garrett Farms open raspberry field (Attachment 26, photo 11 and 12). A 300 foot tape measure and Bushnell Scout 1000 ARC Laser Rangefinder were used to measure sampling point locations along said transect. As each sampling point was located it was marked with an irrigation flag. Sample collection started at 1539 hours. The first sample collected was sample number 1 taken on the west end of said transect and farthest from the pesticide application area. Samples number 2 through 5 were taken in numerical order proceeding west to east along referenced transect at predetermined locations. Each of the five samples was comprised of approximately one and one-half pounds of raspberry plant leaves collected from plants along the south side of aforesaid row identified as "A6" and the north side of row "5B" (Attachment 26, photo 11 and 12). Leaves were taken from plants along referenced rows up to approximately 12 feet in either direction from the measured sampling point and at various heights above the ground. Leaves collected at a single sampling point were deposited in a separate large brown paper bag, said bag folded closed, labeled with a unique identification code number and then placed in a large plastic bag. The open end of the outer plastic bag was twisted shut and secured by tying it in a knot. After each sample was bagged, it was placed in a large insulated ice chest containing seven packets of "blue ice," with each packet weighing approximately 20 ounces. Clean latex gloves were donned prior to the collection of each sample. While on site a map/diagram was made to illustrate the location of the individual sample collection points

(Attachment 15). After collection of all samples, A. VINUELA and I returned to the CAC office where said samples were placed in a refrigerator for storage at 1850 hours.

After further consideration of the sampling plan, it was determined an additional foliar sample should be taken along aforementioned transect and at the edge of the Coastal Berry - North field adjacent to the service road and shade house (Attachment 15). This sixth sample was taken on July 1, 2017, at 0835 hours by A. VINUELA. Said sample was collected using the same protocol as used with the five samples referenced heretofore. The sample collected at sample site number 6 was deposited in the CAC refrigerator for storage on this same date at 0955 hours.

On June 30, 2017, at 0945 hours, [redacted], foreman of the FMG crew working at Coastal Berry - North site 21A when the purported pesticide exposure incident occurred, sent an e-mail to J. HIDALGO along with a list of the 24 FMG employees present during said incident (Attachment 20). An alphabetized and annotated version of referenced list was generated to facilitate clarity (Attachment 20). Of the 24 employees, eight obtained professional medical care due to physical symptoms they experienced as a result of the purported pesticide exposure incident on June 29, 2017. Over time, the entire crew was interviewed, excepting Miguel Jimenez who could not be contacted. Summaries of statements made during said interviews appear hereinafter.

On this same date, at 0950 hours, Vanessa Ruiz of FMG Farm Contracting, Inc. telephoned our office and requested Safety Data Sheets (SDS) for the pesticides their employees were purportedly exposed to while working at Coastal Berry - North site 21A on the morning of June 29, 2017. The SDSs requested were e-mailed to V. RUIZ at 1130 hours this same date.

On this same date, at 1146 hours, I contacted by e-mail the Label Resource Center of DPR, Pesticide Registration Branch, and requested registered labels for pesticides applied to Garrett Farms site 1A Nugent Ranch on June 29, 2017, i.e., pesticides DiPel DF, Pristine Fungicide, Rally 40WSP, and Widespread Max. On this same date, at 1206 hours, I received said labels by e-mail.

On this same date, at 1331 hours, I spoke by telephone with M. TITTLE who conveyed additional information pertinent to the purported pesticide exposure incident on June 29, 2017. M. TITTLE stated the following in summary.

> Our pesticide application at site 1A on the morning of June 29th lasted only 5 minutes. We stopped the application once we were notified fieldworkers in the neighboring Coastal Berry - North field were reportedly experiencing symptoms of pesticide exposure. We resumed the application at 6:00 p.m. that evening when no one was present. Information on the Weather Underground website indicates there was no wind that morning. Ninety percent of the time winds in that area are from west to east, blowing from the Coastal Berry - North field toward our field. One of our employees on site that morning observed pesticide application signs posted at the Coastal Berry - North field and one of their employees rinsing off a pesticide application rig. Perhaps Coastal Berry - North made a pesticide application that morning as well.

On this same date, at 1425 hours, I spoke by telephone with Division Chief Rudy Lopez of the Watsonville Fire Department. In response to my questions R. LOPEZ stated the following in summary.

I do not at present have the time our crew arrived on scene, but the reported incident occurred at approximately 8:30 a.m. on June 29th. Reportedly a crew of 25 [*sic*] fieldworkers was exposed to a spray fungicide. The captain on scene made contact with the one sick patient. An additional four people became sick while we were on scene. The fieldworker supervisor provided a material information sheet indicating the fungicide was water soluble. The workers were removed from the hazardous area and given gross decon, that is washed down with water for a few minutes. Two AMR ambulances, that arrived on scene the same time we did, took the patients to the hospital; three patients in one ambulance and two patients in the other. You may obtain a copy of our incident report by contacting Fire Department Analyst Rosa Meyer at (831)768-3209. Reference #FD016052 when requesting the report.

On this same date, at 1453 hours, I telephoned Fire Department Analyst Rosa Meyer and in a voicemail message identified myself and requested a copy of Watsonville Fire Department's incident report #FD016052 regarding the purported pesticide exposure incident on June 29, 2017.

On this same date (and on dates indicated below), A. VINUELA, speaking in Spanish, interviewed in person all eight FMG employees that obtained professional medical care due to physical symptoms they experienced as a result of the purported pesticide exposure incident on June 29, 2017. The following summaries of FMG employee interview statements include information obtained during the interviews conducted by J. HIDALGO and myself with the three FMG employees at Watsonville Community Hospital on the morning of June 29, 2017.

Date of interview: July 3, 2017
Subject: [redacted]
Interviewer: A. VINUELA

I have been an employee of FMG for one and one half months. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. A pesticide applicator from the neighboring ranch came to the harvesting trailer where we were working and asked how long we would be there. He told us to let him know if we began to smell his pesticide application. He started spraying the first row of plants along the service road, about 30 to 40 feet away. When he finished that row, he shut off his tractor spray rig, came back to where he started and continued the application down the first aisle. I didn't know what he was spraying, but I saw the mist drifting toward us and there was a bad odor in the air. After about five or ten minutes I experienced stomachache, vomiting and a bad taste in my mouth. I told my supervisor about my symptoms. She told everyone to go to the other side of the field. I couldn't tell if the application stopped because I was on the other side of the field. I was taken to the hospital by ambulance. I have had headaches since the exposure and missed a couple days work. I received fieldworker safety training from FMG before starting work. Decontamination facilities were available in the field and I used them to wash my face. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented if the supervisor of the other field would have notified the supervisor of Coastal Berry - North.

Date of interview: June 29, 2017 and June 30, 2017
Subject: [redacted]
Interviewer: Shane DeVine (June 29, 2017) and A. VINUELA (June 30, 2017)

I have been an employee of FMG for one year. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was one of 24 fieldworkers harvesting fruit. I was the crew foreman. Three of us were at the harvesting trailer under the shade house where we collect fruit and punch the fieldworker's cards. Sometime around 8 to 8:30 a.m. a pesticide applicator from the neighboring field came to us and asked how long we would be working in that area. I told him we would be there about 45 minutes to an hour. He said he had to start a pesticide application and asked us to say something if we felt the pesticide spray. He started the application right in front of us on the edge of the neighboring ranch just across the service road, about 30 feet away, spraying the plants on his right. The spray rig was a tractor with two or three spray tubes on the side. We immediately saw the pesticide drifting toward us. It was overcast and the wind was not blowing constantly, but some gusts were blowing in our direction. We were exposed to the pesticide. Even the trailer table was wet with pesticide. One crew member started vomiting then others started complaining of itchy eyes and nausea. I told the entire crew to get back and to move to the opposite side of the block, I honked the truck's horn and after everyone had moved to the other side of the block I moved the truck and trailer. I called David the Dole supervisor, Ignacio Quiroz my supervisor at FMG and 911. The applicator didn't stop the application. I didn't know what he was spraying, but there was a strong odor. I got pesticide on my skin and clothes. After about 10 minutes firefighters came to the field, showered some of us and then we were taken to the hospital. [redacted] and I went in one ambulance and [redacted] and [redacted] in another ambulance. After the inciden[redacted] went home, began feeling ill and his relative drove him to the hospital. A total of six people went to the hospital and all of us were released a few hours later. [redacted] and [redacted] came to work the next day, but they were feeling sick so they were sent to Mar Monte Clinic. [redacted] went back to the hospital the day after the incident. Immediately after the pesticide application started I experienced stomachache, nausea, throat irritation and was vomiting. I am still experiencing stomach discomfort and dizziness today. I received fieldworker safety training from FMG this year. We always have decontamination facilities in the field, but I didn't use them that morning. I knew the location of the emergency medical facility where I was to go to receive care if needed. Should a medical facility not be reasonably accessible from where I am working the procedure is to call 911 and my supervisor if I need care. The PSIS A-9 is in a binder and the Application-Specific Information was on the Coastal Berry - North ranch board. I do not know if the Safety Data Sheets were with the Application-Specific Information. I believe this incident could have been prevent if we would have been informed of the scheduled pesticide application.

Date of interview: July 3, 2017
Subject: [redacted]
Interviewer: A. VINUELA

I have been an employee of FMG for one month. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I saw a tractor applying pesticide to the plants on the first row inside the block in front of us. I didn't know what

they were applying, but there was a very bad odor. I saw the spray coming toward us, it was only 30 or 40 feet away. Right after the application began I experienced eye irritation, headache, itching on my hands, dizziness, nausea and vomiting. Our foreman told everyone to go to the other side of the block. The pesticide applicator didn't stop the application. I did not go to the hospital the day of the exposure incident, but went the following day to the clinic. I'm almost well now, kind of sleepy and still have some itching. Today I went to the clinic again for a follow-up. I have not received fieldworker safety training within the past year. Decontamination facilities were available in the field and I used them to wash my hands. Mar Monte Clinic was where we were to go to receive emergency medical care if needed. When a medical facility is not reasonably accessible from where I am working the procedure is to inform my foremen if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe communications and meetings explaining general rules could have prevented this incident.

Date of interview: June 29, 2017 and July 5, 2017
Subject: [redacted]
Interviewer: S. DEVINE (June 29, 2017) and A. VINUELA (July 5, 2017)

I have been an employee of FMG since last May. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was coming out from the row I was harvesting in and saw the pesticide applicator. He was driving his spray rig, a tractor with tubes, through the third row in the block in front of us, approximately 60 feet away. I didn't know what he was applying, but I could smell it and I saw the spray cloud drifting toward us because of the breeze. I experienced throat and eye irritation and was vomiting. The crew foreman could see people getting sick, so she moved the crew to the other side of the lot away from the pesticide application. After we moved I saw the foreman vomiting and other people getting sick. I don't think the applicator stopped the application, but I'm not sure because we were told to go to the other side of the block. I went home after the incident, took a shower, but didn't feel well so my sister drove me to the hospital. I feel alright now, but I'm still using eye drops. I received fieldworker safety training before starting work. Decontamination facilities were available in the field, but I didn't use them. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was aware of the PSIS A-9's location, but not where the grower's pesticide use records were nor where the Application-Specific Information was. I believe such an incident could have been prevented if notification were given before applying pesticides when people are working nearby.

Date of interview: June 29, 2017 and July 3, 2017
Subject: [redacted]
Interviewer: J. HIDALGO (June 29, 2017) and A. VINUELA (July 3, 2017)

I have been an employee of FMG for one month. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. Sometime around 8:30 to 8:40 in the morning I sensed a very strong and bad odor. I could see the application tractor about 30 or 40 feet away from us. I didn't know what was being applied, but I saw a cloud of pesticide. The weather was overcast and there was a slight wind, but I don't remember in what direction. About five minutes after the application started my eyes became irritated. My eyes were burning and

itching for about an hour. I informed the foreman of my symptoms. She was warning everyone about the exposure, honking the horn of the truck and telling us to go to the other side of the field. They kept applying the pesticide. I was taken to the hospital that morning by ambulance. The day after the incident I went to work, but decided to go back home because I wasn't feeling well, I had a headache. I received fieldworker safety training before the season began. Decontamination facilities are always in the field, but I didn't use them that morning. I washed my eyes using my own water. My employer did not inform me of the location of an emergency medical facility where I could go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented if the other company would have notified our foreman.

Date of interview: July 3, 2017
Subject: [redacted]
Interviewer: A. VINUELA

I have been an employee of FMG for two or three weeks. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I saw a tractor about 30 to 40 feet away applying pesticide to the plants along the service road on the outside of the block in front of us. After about five minutes my throat became irritated, I was nauseous and had a headache. The foreman told everyone to go to the other side of the block. I didn't know what was being applied, but I sensed a bad odor and could see the mist coming toward us. I don't know how long the application lasted, for the crew was moved to the opposite side of the block and I couldn't see. My symptoms lasted all day, but I didn't go to the hospital. The day after the exposure incident I went to work, but wasn't feeling well so I was told to go the clinic. I received fieldworker safety training before starting work. Decontamination facilities are always in the field and I used them that morning to wash myself. My employer informed me of the location of an emergency medical facility where I could go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I knew the location of the PSIS A-9, but not where the grower's pesticide use records were located nor where the Application-Specific Information was. I believe the incident could have been prevented by notification prior to the application or by making applications at night.

Date of interview: July 5, 2017
Subject: [redacted]
Interviewer: A. VINUELA

I have been an employee of FMG since last May. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was working on the table at the harvesting trailer with our foreman when a pesticide applicator came to us and asked if we would be staying in the area. The foreman said yes. He started to apply pesticides on the corner of the field in front of us, proceeded along the first row of plants by the service road and toward where we were. He was probably 40 to 50 feet away. I didn't know what was being applied, but I smelled a very bad odor and saw the mist coming toward us. Right after the application started I experienced throat irritation, a bad taste in my mouth, nausea and my face itched. I did not inform the foreman of my symptoms. She was already aware of the exposure and told everyone to go to the other side of the field. I don't know how long the application lasted. I was taken by ambulance to the hospital that morning. I went back to the hospital the following day because I

felt nauseous. I was feeling sick until Tuesday, July 4th. I feel fine now, but will go to the clinic for a follow-up this Friday. I received fieldworker safety training from my employer before the season started. Decontamination facilities were at the field and I used them to wash my face. My employer informed me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. The PSIS A-9 was in the truck, but I was not informed where the grower's pesticide use records were nor the location of the Application-Specific Information. I believe the incident could have been avoided if the fieldworkers and the pesticide applicator had reached an agreement before applying the chemicals.

Date of interview: July 3, 2017
Subject: [redacted]
Interviewer: A. VINUELA

I have been an employee of FMG since last May. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I came out of the row I was picking in and saw the applicator applying pesticide by the service road in the block right in front of us. He was approximately 30 feet away. I didn't know what was being applied, but there was a very bad odor and I could see the mist coming toward us. Soon after the application started I began to experience a bad taste in my mouth, excess saliva, vomiting and difficulty breathing. I told the foreman about my symptoms. She told everyone to move to the other side of the block. I didn't see the pesticide application stop. My difficulty breathing stopped after I was showered by the firefighters in the field. I was taken by ambulance to the hospital where I was showered again. Later that afternoon I had a headache and high temperature. I still feel a little weak and sore, like when you have a flu. Before starting work I received fieldworker safety training. Decontamination facilities were available in the field and I used them that morning to wash my hands. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented by communication between the two supervisors. The applicator, after seeing the people working nearby, should not have applied the pesticide.

On this same date, June 30, 2017 (and on dates indicated below), A. VINUELA, speaking in Spanish, interviewed 15 FMG employees (14 in person and one by telephone) that were present when the purported pesticide exposure incident occurred, yet who did not seek professional medical care. (FMG employee M. JIMENEZ was also present during referenced incident but could not be contacted for an interview.)

Date of interview: July 3, 2017
Subject: Albor, Ricardo
Interviewer: A. VINUELA

I have been an employee of FMG since last May, 2017. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was working in the hoop house tunnel and didn't see the application. I just heard people talking about it. Our foreman told everyone to go to the other side of the block. I didn't experience any symptoms during the incident. When I arrived home that afternoon I began feeling throat irritation and itching on my

face. The next day I felt fine. I received fieldworker safety training within the past year. Decontamination facilities were available in the field, but I didn't need to use them. My employer informed me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman or call 911 if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented if advance notification were given.

Date of interview: June 30, 2017
Subject: Avila, Angel
Interviewer: A. VINUELA

I started working for FMG on June 28th. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I saw a tractor 30 or 40 feet away applying pesticide in the field in front of us. I didn't know what they were applying, but I could see the mist. I can't say if it was drifting or not. I didn't experience any symptoms of pesticide exposure. The crew foreman told us to get out of the field on the other side. I don't know if the application ever stopped. I received fieldworker safety training before the start of work. Decontamination facilities were available in the field, but I didn't need to use them. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented through communication and taking care of people working in the fields.

Date of interview: June 30, 2017
Subject: Beristain, Brian
Interviewer: A. VINUELA

I started working for FMG one month ago. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I saw a tractor applying pesticide in the block in front of us. He was more than 100 feet away. I didn't see any pesticide mist drifting, nor did I experience pesticide exposure. The crew foreman told everyone to get out of the block on the other end. The applicator didn't stop the application. I received fieldworker training before starting work. Decontamination facilities were available at the field, but I did not need to use them. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented through advance notification.

Date of interview: July 3, 2017
Subject: Camarillo, Carlos
Interviewer: A. VINUELA

I started working for FMG one week ago. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I saw a tractor spraying pesticide along the service

road outside the block in front of us. The applicator was 30 to 40 feet away from us. I didn't know what was being applied, but there was a bad strange odor. I could see the pesticide mist drifting to where we were working. The wind was blowing toward us. Our foreman told everyone to get out of the block on the opposite end. I didn't experience any symptoms until one half hour after the incident. I was dizzy and had a dry mouth. My symptoms lasted about two or three hours. I am not sure if the applicator stopped the application, for I moved to the other side of the block and couldn't see. I have not received fieldworker safety training, I only started working one week ago. Decontamination facilities were at the field, but I didn't use them. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I did know the location of the PSIS A-9, but not where the grower's pesticide use records were nor the location of the Application-Specific Information. I believe the incident could have been prevented through advance notification.

Date of interview: July 3, 2017
Subject: Camarillo, Isabel
Interviewer: A. VINUELA

I have been an employee of FMG since the middle of May this year. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. A tractor started to spray the plants in the block in front of us. It was applying pesticide along the service road and then changed direction and continued inside the first row of plants. The application was 30 or 40 feet away from us. I didn't know what he was applying, but I could see the mist. About five minutes after the application started I got a headache, it only last for another five minutes. I reported my exposure symptom to the foreman, who was telling everyone to move to the other side of the field. I could hear the application for a while, but from the other side of the block I couldn't tell if he stopped. I received fieldworker safety training before starting work. Decontamination facilities were at the field and I used them to wash my hands. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented had the two supervisors communicated with each other.

Date of interview: June 30, 2017
Subject: Camarillo, Ramiro
Interviewer: A. VINUELA

I have been an employee of FMG for the last two months. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I saw a tractor spraying approximately 40 feet away from us. I didn't know what he was spraying and didn't see any mist or experience any exposure symptoms. Our foreman told us to go to the other side of the field. The applicator didn't stop spraying. I received fieldworker safety training two or three weeks ago. Decontamination facilities were at the field, but I didn't use them that morning. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS

A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented by the applicator giving advanced notice.

Date of interview: June 30, 2017
Subject: Garcia, Daniel
Interviewer: A. VINUELA

I have been an employee of FMG for the last two months. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was harvesting in the middle of my row and could see the tractor spraying pesticide along the edge of the neighboring field. I didn't know what was being sprayed and didn't see any mist. About five or ten minutes after the application started I experienced eye irritation. Ten minutes later I was fine. I told the foreman about my exposure symptom. She was telling everyone to get out of the block on the other side of the field. She contacted the supervisor and the ambulances. I believe they stopped the application after spraying two or three more rows. I received fieldworker safety training two weeks ago. Decontamination facilities were at the field, but I used the water I had with me to flush my eyes. My employer informed me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented by educating applicators and harvesting crews.

Date of interview: June 30, 2017
Subject: Garcia, Graciela
Interviewer: A. VINUELA

I have been an employee of FMG for one year. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I saw a tractor applying pesticide approximately 40 feet from us. I didn't know what was being applied, but I saw the mist coming toward us. I didn't experience any pesticide exposure; I was working in the middle of the row and I had my nose and mouth covered. The crew foreman told us to go to the other side of the field and harvesting was stopped. The applicator didn't stop the application. I received fieldworker safety training three weeks ago. Decontamination facilities were at the field, but I didn't need to use them. My employer informed me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I knew the location of the PSIS A-9, but not where the grower's pesticide use records were nor where the Application-Specific Information was. I believe the incident could have been prevented by giving us advance notice or making applications at night or during non-work hours.

Date of interview: June 30, 2017
Subject: Jimenez, Guillermo
Interviewer: A. VINUELA

I have been an employee of FMG for one month. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was working on the edge of the field and saw an applicator applying pesticide approximately 45 feet away. I didn't know what was being applied, but I could see the fine mist coming to where we were at. About 15 minutes after the

application started I experienced eye irritation, but it only lasted for a couple minutes. I informed the foreman of my eye irritation. The foreman was taking care of everyone in the field. The applicator didn't stop the application. I received fieldworker safety training two weeks ago. Decontamination facilities were available at the field and I used the water to flush my eyes. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented through notification and by not applying pesticides when people are nearby.

Date of interview: June 30, 2017
Subject: Jimenez, Sinay (interviewed in English)
Interviewer: A. VINUELA

I started working with FMG three weeks ago. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was harvesting in my row inside the tunnel and didn't see the pesticide application or experience any exposure symptoms. Our crew foreman told everyone to go to the other side of the field. I have received fieldworker safety training within the past year. Decontamination facilities were available at the field, but I didn't need to use them. My employer informed me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I knew the location of the PSIS A-9, but not where the grower's pesticide use records were nor where the Application-Specific Information was.

Date of interview: June 30, 2017
Subject: Lopez, Jesus
Interviewer: A. VINUELA

I have been an employee of FMG for one and one half months. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was harvesting in the middle of a row and saw a tractor applying pesticide 30 to 40 feet away. I didn't know what was being applied, but there was a bad odor and I could see the mist when I came to the edge of the field to get a box. I didn't experience any pesticide exposure symptoms. I heard people saying the foreman wanted us to move to the other side of the field. The applicator didn't stop the pesticide application. I received fieldworker safety training two weeks ago. Decontamination facilities were at the field, but I didn't need to use them. My employer informed me Watsonville Hospital was where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented by making the application when no one was around.

Date of interview: July 27, 2017
Subject: Nunez, Celestino (interviewed by telephone)
Interviewer: A. VINUELA

I have been an employee of FMG for two months. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. Around 8 or 8:30 a.m. I was in my row in the field harvesting berries when I heard a tractor and its spray pump. At one point I came up to the harvesting trailer and saw the pesticide spray rig 30 or 40 feet away making an application along the service road next to the block right in front of us. I didn't know what he was applying, but there was an odor and I could see the pesticide mist. Right after the application started I got a headache that lasted for the rest of the day. I informed our foreman of my headache. She told everyone in the crew to move to the other side of the field. I don't know if the application stopped, for we had moved to the other side of our block. I have received fieldworker safety training within the past year. Decontamination facilities were available at the field, but I didn't use them. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was not told the location of the PSIS A-9, the grower's pesticide use records nor where the Application-Specific Information was. I believe the incident could have been prevented through communication between the two supervisors. With no communication there is no control.

Date of interview: June 30, 2017
Subject: Padilla, Cristina
Interviewer: A. VINUELA

I have been an employee of FMG for one year. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was setting the crew into the rows for harvesting when the person on the pesticide spray rig came and talked with the crew foreman. He then started the application about 60 feet away along the first row of plants across the service road. I didn't know what he was applying, but I could see the pesticide drifting toward us. There was a bad strong odor and I felt the pesticide on my clothes. The foreman asked me to help her tell people to move to the other side of the field. The foreman was taking care of the most affected workers. About ten minutes later I developed a headache, stomachache, nausea and my arms were itching. I informed the foreman of my symptoms. I'm still having some stomach discomfort and headache. I don't know how long the pesticide application lasted. I have received fieldworker safety training within the past year. Decontamination facilities were at the field, but I didn't use them. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was told the PSIS A-9 was in the binder, but was not informed where the grower's pesticide use records were nor where the Application-Specific Information was. I believe the incident could have been prevented through advance notification.

Date of interview: July 3, 2017
Subject: Rincon, Christina
Interviewer: A. VINUELA

I started working for FMG one and one half months ago. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was harvesting inside the tunnel in the middle of my row and only heard the pesticide tractor. I didn't see it. I didn't experience any pesticide exposure symptoms. The foreman honked the truck

horn and told everyone to move to the other side of the field. I received fieldworker safety training before starting work. Decontamination facilities were at the field, but I didn't need to use them. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was told the location of the PSIS A-9, but not where the grower's pesticide use records were nor where the Application-Specific Information was.

Date of interview: July 3, 2017
Subject: S. SANCHEZ
Interviewer: A. VINUELA

I have been an employee of FMG since last May. I was working at the Coastal Berry - North ranch in Watsonville on the morning of June 29, 2017. I was harvesting inside the tunnel on the other side of the row and didn't see the pesticide application equipment or the application. I didn't experience any symptoms of pesticide exposure. My mother, a fellow crewmember, told me to go to the other side of the field. I received fieldworker safety training within the past year. Decontamination facilities were at the field, but I didn't use them. My employer did not inform me of the location of an emergency medical facility where I should go to receive care if needed. When no medical facility is reasonably assessable from where I am working the procedure is to inform my foreman if I need medical care. I was told the PSIS A-9 was on the board, but was not informed where the grower's pesticide use records were nor where the Application-Specific Information was.

On July 3, 2017, at 1025 hours, A. VINUELA, speaking in Spanish, interviewed in person Garrett Farms employee pesticide handler Melchor Galvan. (Santa Cruz CAC Deputy Agricultural Commissioner David Sanford was on site nearby but did not participate in said interview.) In response to A. VINUELA's questions M. GALVAN stated the following in summary.

I have been an employee of Garrett Farms for six or seven years. I am a pesticide applicator and drive trucks and other equipment. My supervisors are Jose Resendiz and Morgan Tittle. On the morning of June 29th I applied pesticides Pristine, Rally and DiPel at our Nugent Ranch using an air blast spray rig with three nozzles on each side. Supervisor Resendiz helped me with the pesticide mix and load and posting of the field with pesticide application signs. Before starting the application I spoke with a couple women working at a nearby harvesting trailer. I told the women I would be making a pesticide application, but would keep a safe distance and asked them to signal me if they smelled something. The fieldworkers moved their truck and harvesting trailer to the northern corner of the block they were working in after I started the application, which was sometime around 7:30 to 8:00 a.m. I started the application 12 rows into our field and away from the Coastal Berry - North field. There was no wind at all. I made the application row by row proceeding eastward. About 20 minutes later Supervisor Resendiz came and told me to stop the application because there was a problem with the fieldworkers in the neighboring field. One got sick. I had applied pesticides to 21 rows by the time Supervisor Resendiz told me to stop. Supervisor Resendiz then told me to continue the application two blocks to the north, further away from the fieldworkers. I continued the application in that area for approximately half an hour to another 40 rows before Supervisor Resendiz came and told me to stop the application for the day. Later

> that evening we finished the application to the first 12 rows of the block we originally started in that morning. I do not know why the fieldworkers got sick. The pesticide application was not drifting on them; there was only a light breeze and it was blowing in the opposite direction, away from them. The fieldworkers should not have started harvesting because our field was posted with pesticide application signs. I didn't see a fire truck or ambulance that morning.

After interviewing M. GALVAN, A. VINUELA measured the distance from the western edge of the Garrett Farms Nugent Ranch, immediately across the service road from the Coastal Berry - North field where the fieldworkers were working, to the 12th row where M. GALVAN said he started the application. Said distance was 87 feet.

On this same date, at 1105 hours, A. VINUELA, speaking in Spanish, interviewed in person Garrett Farms Supervisor Jose Resendiz. (D. SANFORD was on site nearby but did not participate in said interview.) In response to A. VINUELA's questions J. RESENDIZ stated the following in summary.

> I am an employee of Los Amigos Harvesting and my job title is Supervisor. I am Morgan Tittle's assistant at Garrett Farms. I supervise pesticide applicators and tractor and truck drivers. On June 28th Mr. Tittle and I scheduled a pesticide application for the Nugent Ranch for the following day, so I posted the field with pesticide application signs. I was at the Nugent Ranch on the morning of June 29th and helped mix and load pesticides Pristine, Rally, DiPel and Widespread Max into our spray rig. The rig's side nozzles were operational, but the large application cone on top was not. I noticed fieldworkers and a harvesting trailer under the shade house at the adjacent Coastal Berry - North field. The fieldworkers were about 30 to 40 feet away from the lot where we were going to make the pesticide application. Prior to the application, applicator Melchor Galvan went over to the fieldworkers and spoke with them. The fieldworkers moved to the opposite side of the field they were in, further away from the application site, before the application started at approximately 8:00 a.m. I monitored wind speed at the site with an application on my cell phone. There was no wind. I saw applicator Galvan start the application about 12 to 15 rows into our field and away from the service road that separates our field and the Coastal Berry - North field. I went to another lot there on site while applicator Galvan continued the application. The application proceeded row by row and westward toward the Coastal Berry - North field. The east side of our field was sprayed the day before. About 10 minutes after the application started I received a telephone call from David, Coastal Berry - North Supervisor, who said his fieldworkers were getting sick. I immediately went to the application site and told applicator Galvan to stop the application. By that time he had applied the pesticides to four rows. I then instructed applicator Galvan to continue the application in one of our neighboring lots further away from the fieldworkers. After receiving another call from David requesting labels for the pesticides we applied, I contacted applicator Galvan and told him to stop the application for the day. By that time he had applied two more tanks in the nearby lot. After applicator Galvan stopped the application he parked the spray rig on a service road two lots to the north of where the application was made earlier that morning. After speaking with applicator Galvan, I went to the east side of the Coastal Berry - North field, where David and the fieldworkers were, to deliver the pesticide labels. It was there I saw the fire truck and ambulances. After speaking with David I telephoned Mr. Tittle and informed him what had happened. Later that evening in the absence of any fieldworkers we completed the application, including

> the rows adjacent to the service road separating Garrett Farms and Coastal Berry - North. I don't think our pesticide application drifted upon the fieldworkers. That same morning I saw a couple Coastal Berry - North pesticide tractors driving by the area. I did not see them apply a pesticide, but their pesticide spray equipment may have emitted an odor that caused the fieldworkers to become ill.

CAC office records indicate J. RESENDIZ's employer, Los Amigos Harvesting, registered as a Farm Labor Contractor with the Santa Cruz CAC for year 2017 (Attachment 30). Los Amigos Harvesting principle Miles Steven Garrett has valid Farm Labor Contractor License #FLC000234426 with expiration date March 25, 2018.

On July 5, 2017, at 1125 hours, A. VINUELA, speaking in Spanish, interviewed in person D. VASQUEZ. In response to A. VINUELA's questions D. VASQUEZ stated the following in summary.

> On the morning of June 29, 2017, I received a telephone call from [redacted] foreman of the FMG crew harvesting raspberries for us at our Bronson Ranch. [redacted] informed me a neighboring Garrett Farms pesticide application was drifting upon her and her crew. I informed [redacted] I had no knowledge Garrett Farms would be making a pesticide application that morning. I telephoned Jose Resendiz, Supervisor of Garrett Farms, who informed me a pesticide application was taking place and he had forgotten to notify me of the application. Mr. Resendiz stated one of the pesticides being applied was Pristine. I informed Mr. Resendiz the harvest crew moved away from where they were harvesting due to pesticide exposure. I arrived at the Bronson Ranch about 10 minutes after receiving [redacted] call and observed Garrett Farms still making the application; the spray rig was working down the fourth row from the edge of the field. I then went to check on the FMG crew that was now on the west side of the lot, the opposite side of the lot from where they were harvesting earlier. After that, the ambulances arrived.

On July 5, 2017, all foliar samples collected (i.e., samples 1 through 6) were packed in an insulated ice chest along with seven packets of 'blue ice,' with each packet weighing approximately 20 ounces. All requisite documentation, i.e., Investigative Sample Analysis Report forms and sampling plan map (Attachment 15), was also packet in referenced ice chest. On this same date, at 1500 hours, the ice chest was delivered to The UPS Store at 1961 Main Street in Watsonville, California, for shipment to the California Department of Food and Agriculture (CDFA) Center for Analytical Chemistry-Residue laboratory in Sacramento, California.

On July 11, 2017, at 1419 hours, I contacted M. TITTLE by e-mail and requested a copy of Garrett Farms' employee pesticide handler written training program and training records pertaining to employees J. RESENDIZ and M. GALVAN. After reportedly consulting with CalRisk, Inc., the private company that provided referenced training for said employees, M. TITTLE (over a period of approximately three weeks) provided the documents requested (Attachment 12). Documents received included photocopies of training record forms and training certificates/cards for both men, a copy of DPR's *Pesticide Safety Information Series* (PSIS) leaflet A-8 and leaflet A-9 (both leaflets in English), and DPR website address http://www.cdpr.ca.gov/docs/whs/psisenglish.htm that provides access to the entire PSIS. The written training program received lacked any reference to pesticides used (by Garrett Farms employee pesticide handlers) which is necessary in addressing pesticide specific training

information requirements pursuant to Title 3 of California Code of Regulations (3 CCR), section 6724(b), Attachment 2. Further, training records received did not include employer's name (i.e., Garrett Farms) as required by 3 CCR 6724(e), Attachment 2. Also requested in the e-mail were copies of Garrett Farms pesticide use reports (PURs) and application-specific information display (ASID) for June, 2017, and information regarding the June 29, 2017, pesticide application at Garrett Farms site 1A Nugent Ranch, i.e., equipment used and spray droplet size. A copy of the American Society of Agricultural and Biological Engineers S572.1 standard (Attachment 1) was attached to the e-mail to provide M. TITTLE guidance regarding referenced droplet size.

On this same date, at 1425 hours, I telephoned R. MEYER who stated the incident report I requested in my earlier voicemail message had just been finalized and would be forwarded to me. R. MEYER noted #FD016052 was the incident's Dispatch Number and #2017-1001690 is the reference number for the corresponding Incident Report.

On July 13, 2017, at 0951 hours, I telephoned American Medical Response (AMR) of Santa Cruz County, the advanced life support ambulance transport provider that transported five FMG employees to Watsonville Community Hospital on June 29, 2017. I was directed to the voicemail mailbox of Mr. Brad Cramer. In a voicemail message to B. CRAMER I identified myself and requested copies of the AMR Prehospital Care Reports (PCRs) for the five FMG employees transported to Watsonville Community Hospital on the morning of June 29, 2017. After several failed attempts to contact B. CRAMER, I received a telephone voicemail message from Ms. Brenda Brenner, Emergency Medical Services Administrator/Senior Health Services manager of the Santa Cruz County Public Health Department, requesting I contact her regarding my acquisition of said PCRs.

On July 14, 2017, at 1405 hours, an e-mail was sent to J. RAMIREZ of Coastal Berry - North requesting copies of their pesticide use reports (PURs) and application-specific information display (ASID) for the month of June 2017 for their site 21A Bronson Ranch. On this same date J. RAMIREZ hand delivered to our office said records that were comprised of written recommendations, ASIDs and documents entitled Pesticide Application Record (Attachment 24). Pesticide use information obtained from CalAgPermits database for site 21A indicates Pristine Fungicide was applied on June 28, and Rally 40WSP was applied on June 23 and 25. Pesticide use information and application-specific information type display sheets provided by J. RAMIREZ indicate Pristine Fungicide was not applied to site 21A in June, whereas Rally 40WSP was applied on June 3, but not to block 7 where FMG employees were working the morning of the purported pesticide exposure incident. Further, J. RAMIREZ stated a pesticide application was made on June 28 to block 8 that is adjacent to and north of block 7. (J. RAMIREZ states the notation "1-3," the block/lot number, on both the Application-Specific Information record and Pesticide Application Record dated June 3, 2017, means "1, 2 and 3.") However, inconsistencies exist between the pesticide use information and information on the corresponding application-specific information display. Specifically: CalAgPermits data indicates applications were made on June 23 and 25, yet they are not recorded in the application information display; CalAgPermits indicates Pristine Fungicide was applied on June 28, but Pristine Fungicide is not present on the application-specific display for that date; and written recommendations indicate applications were made on June 3 and 27, but said applications do not appear in the CalAgPermits derived information. A determination cannot be made as to which information source, i.e., CalAgPermits, recommendations or the application-specific information display, is correct for the various applications. Failure to submit a PUR is a violation of 3 CCR 6626(a) and failure to include a

pesticide application on the application-specific information display is a violation of 3 CCR 6723.1(b), Attachment 2.

On July 15, 2017, at 0936 hours, I received an e-mail from M. TITTLE providing an update on his collection and submission of information previously requested. M. TITTLE indicated spray adjuvant Widespread Max was inadvertently omitted from the PUR previously provided regarding the June 29, 2017, application to Garrett Farms site 1A Nugent Ranch. M. TITTLE also stated the spray rig used to apply pesticides to Garrett Farms site 1A Nugent Ranch on June 29, 2017, was a Gearmore P42N1-400G with spray nozzles ranging in height from ground level to approximately five feet. Based on nozzle size used and a spray pressure of 35 PSI, M. TITTLE determined the application droplet size to be "very fine" according to the American Society of Agricultural and Biological Engineers S572.1 standard (Attachment 1).

On July 17, 2017, at 0800 hours, I received six Pesticide Incident Reports (PIRs), one for each of the six FMG employees that obtained medical care at Watsonville Community Hospital after the purported pesticide exposure incident on June 29, 2017. D. SANFORD obtained said PIRs from CalPEATS (California Pesticide Enforcement Activity Tracking System) WHS (Worker Health and Safety, DPR) investigation requests. Additionally, a Doctor's First Report of Occupational Injury or Illness (DFROII) regarding [redacted] was received from WorkWell Medical Group, Hollister, California, on August 28, 2017. Said PIRs and DFROII comprise Attachment 6. As of the writing of this report no PIR or DFROII has been received by the CAC regarding FMG employee [redacted]

On July 17, 2017, at 1203 hours, I e-mailed FMG Farm Contracting, Inc. and requested Fieldworker Training records for the 24 FMG employees involved in the purported pesticide exposure incident on June 29, 2017. In response to said request, FMG provided 12 separate records documenting training on an equal number of dates (Attachment 11). Of these 12 documents, only three appear to record fieldworker safety training pursuant to 3 CCR 6764 (Attachment 2). Analysis of the three documents pertaining to field worker safety training is outlined below.

- Title(s) and source(s) of training materials used do not appear on any record.
- Trainer's name appears on only one record, and trainer's qualifications does not appear on any record.
- Ten employees worked in a treated field without receiving requisite training from FMG within the past year.

CAC office records indicate FMG Farm Contracting, Inc. registered as a Farm Labor Contractor with the Santa Cruz CAC for year 2017 (Attachment 29). FMG principle Francisco Mora Gonzales has valid Farm Labor Contractor License #FLC000185517 with expiration date February 1, 2018.

On July 17, 2017, at 1445 hours, a fax was sent to Watsonville Community Hospital Medical Records Department requesting all pertinent medical records for the six FMG employees that obtained medical care at said hospital after the purported pesticide exposure incident on June 29, 2017. Said fax included signed Medical Information Authorization forms, one for each of the six FMG employees. Only five of the six records requested were received; medical records for [redacted] could not be located by said hospital due to the erroneous date of birth on his Medical

Information Authorization form (Attachment 22). ([redacted] could not be contacted to obtain his correct date of birth.) Individual employee symptoms and diagnoses are summarized below.

- [redacted]
  - ER arrival – June 29, 2017 at 0919 hours.
  - Symptoms nausea and vomiting.
  - Diagnosis – exposure to Pristine Fungicide with nausea and vomiting within hours of exposure.
  - Discharge – June 29, 2017 at 1046 hours.

- [redacted]
  - ER arrival – June 29, 2017 at 0905 hours.
  - Symptoms – nausea, vomiting, dizziness and sore/itchy throat.
  - Diagnosis – exposure to Pristine Fungicide with severe nausea, vomiting and sore throat.
  - Discharge – June 29, 2017 at 1223 hours.

- [redacted] – Medical Information Authorization form only (medical records unavailable).

- [redacted]
  - ER arrival June 29, 2017 at 0918.
  - Symptoms – burning sensation in both eyes.
  - Diagnosis – acute bilateral chemical conjunctivitis (i.e., inflammation and/or swelling of the conjunctiva) secondary to fungicide exposure.
  - Discharge – June 29, 2017 at 1257 hours.

- [redacted]
  - initial visit – June 29, 2017
    - ER arrival – 0906 hours.
    - Symptoms – nausea, shortness of breath, and burning, sore and itchy throat.
    - Diagnosis – chemical exposure to Pristine Fungicide with sore throat, nausea and shortness of breath.
    - Discharge – 1040 hours.
  - follow-up visit – June 30, 2017
    - ER arrival – 1107 hours.
    - Symptoms – nausea and vomiting.
    - Diagnosis - chemical exposure.
    - Discharge – 1344 hours.

- [redacted]
  - ER arrival – June 29, 2017 at 0919 hours.
  - Symptoms – nausea, vomiting and sore throat.
  - Diagnosis – accidental exposure to Pristine Fungicide with localized irritation causing nausea, vomiting and sore throat.
  - Discharge – June 29, 2017 at 1103 hours.

Aforesaid medical records and Medical Information Authorization forms appear in Attachment 22.

On this same date, at 1516 hours, a fax was sent to WorkWell Clinic in Watsonville, California, requesting all pertinent medical records on FMG employee [redacted], 21 year old, male, who visited said clinic on June 30, 2017, and obtained medical care as a result of the purported pesticide exposure incident on June 29, 2017. Said fax included a Medical Information Authorization form signed by [redacted]. After several attempts to contact said clinic by fax, I spoke by telephone on August 28, 2017, with Ms. Veronica Arellano of the WorkWell Medical Group, Hollister, California office who, on that same day, provided said records by both e-mail and fax. Medical records provided are for [redacted] initial visit to the clinic on June 30, 2017, and his follow-up visit on July 3, 2017. [redacted] symptoms and diagnoses are summarized below.

- Initial visit – June 30, 2017
  - ER arrival – 0850 hours.
  - Symptoms – aching, headache, dizziness, nausea, vomiting, bilateral eye itchiness and burning, blurred vision, itchiness of throat, trunk and upper extremities, cough with phlegm and shortness of breath.
  - Diagnosis – chemical exposure, pain in throat, headache, nausea with vomiting, unspecified, pruritus and toxic effects of pesticides.
  - Discharge – unknown

- Follow-up visit – July 3, 2017
  - ER arrival – 0830 hours.
  - Symptoms – itching on back of right arm.
  - Diagnosis – chemical exposure, pain in throat, headache, nausea with vomiting, unspecified, pruritus and toxic effects of pesticides.
  - Discharge – 0913 hours.

[redacted] medical records and Medical Information Authorization form appear in Attachment 22.

A second FMG employee [redacted] also obtained professional medical care at WorkWell Clinic for physical symptoms he experienced as a result of the purported pesticide exposure incident on June 29, 2017. [redacted] medical records could not be obtained, for he could not be contacted to sign a Medical Information Authorization form. [redacted] was however interviewed earlier regarding the purported pesticide exposure incident and his statements recorded. A summary of [redacted] interview statements is included with that of the other 22 FMG employees interviewed.

On July 21, 2017, at 1306 hours, I spoke by telephone with Steve Garrett, owner of Garrett Farms, who requested I interview his employee truck driver Oscar Ortiz. O. ORTIZ was reportedly at Garrett Farms site 1A Nugent Ranch the night before the purported pesticide exposure incident and witnessed activities on neighboring Coastal Berry - North site 21A Bronson Ranch that were indicative of a pesticide application. S. GARRETT said he would let his office staff know I would be contacting them to schedule a meeting with O. ORTIZ.

On this same date, at 1334 hours, I spoke by telephone with B. BRENNER and was informed AMR had requested she provide me the Prehospital Care Reports (PCRs) for the individuals they transported to Watsonville Community Hospital on June 29, 2017. When B. BRENNER indicated she had only three PCRs I informed her AMR transported a total of five FMG employees to the

hospital on June 29, 2017; three individuals in one ambulance and two individuals in a second ambulance. B. BRENNER requested I provide her a memo requesting the PCRs and the names of those individuals for whom a PCR was requested. Said memo and corresponding Medical Information Authorization forms were sent to B. BRENNER by e-mail on this same date.

On this same date, at 1556 hours, an e-mail was sent to M. TITTLE stating I had yet to receive Garrett Farms employee handler training program and the application-specific information for June, 2017.

On the afternoon of July 24, 2017, I contacted the Garrett Farms office and scheduled a meeting between A. VINUELA and O. ORTIZ at Garrett Farms site 1A Nugent Ranch on July 25, 2017.

On July 25, 2017, at 0905 hours, A. VINUELA, speaking in Spanish, interviewed in person O. ORTIZ. In response to A. VINUELA's questions O. ORTIZ stated the following in summary.

> I was an employee of Garrett Farms for 20 years. This past year I have been an employee of Los Amigos Harvesting. I work under the supervision of Morgan Tittle and Jose Resendiz. My job title is Truck Driver and I drive trucks transporting fruit to coolers. I also drive tractors, forklifts and other equipment. I was not at Garrett Farms site 1A Nugent Ranch on the morning of June 29, 2017. The night before, June 28, 2017, at 8:00 p.m., I was at site 1A assisting a pesticide application by driving the water tank truck. When driving along the service road that separates the Coastal Berry - North ranch and the Garrett Farms Nugent Ranch, I saw a truck and tractor commonly used by Coastal Berry - North to make pesticide applications and a sign of the type used to post a field prior to a pesticide application. Referenced tractor and sign were located on the Coastal Berry - North side of the service road about half way between their equipment yard and shade house. I did not see any workers in the area nor smell any pesticide odor. I do not know if a pesticide was applied to that field or if they were planning to make an application.

On July 26, 2017, at 1331 hours, I received by e-mail from B. BRENNER the five Prehospital Care Reports (PCRs) previously requested. Said Prehospital Care Reports comprise Attachment 27.

On this same date I received an e-mail from the Watsonville Fire Department with two attached documents regarding the purported pesticide exposure incident of June 29, 2017. One document is entitled Prehospital Care Report and the other is without title. The Prehospital Care Report references number FFD17062901605 2 as both the Incident number and Call number, whereas the untitled document references Dispatch Run #FFD170629016052 and Incident #2017-1001690. Attached to the untitled document are photographs taken in the field of page 1 and page 2 of a pesticide Pristine Fungicide container label. Aforesaid reports collectively state the following in summary.

> Fire Department Engine 4413 responded to a report of a female patient and crew of 25 [*sic*] field workers who became sick after being sprayed by an unknown chemical at East Lake and Wagner Ave. At 0837 hours Engine 4413 arrived on scene where five members of the crew were complaining of shortness of breath, eye irritation, headache and nausea, and two of the five were vomiting. Prior to arrival, Engine 4413 called all responding ambulance units to the scene. On site Manager David Vasquez identified the chemical as Pristine (fungicide), provided some MSDS type material, but was not specific as to how the group

was sprayed. MSDS information advised decontamination with "plenty of water." Five crew members were decontaminated and escorted to ambulance units 3 and 4 for transport to Watsonville Hospital. Early notification was given to the hospital regarding the chemical and number of patients being transported there. After decontaminating the five patients and turning the scene over to the responsible property manager, Engine 4413 proceeded to the hospital to ensure all pertinent information was relayed to the staff. Engine 4413 was assigned to patient decontamination. All treatment, care and assessment was performed by referenced ambulances. After return to station both Cal OSHA and the local Agricultural Commissioner were notified.

Referenced documents received from the Watsonville Fire Department comprise Attachment 14.

On July 27, 2017, at 1330 hours, I spoke by telephone with M. TITTLE who stated Garrett Farms pesticide use reports and written recommendations are displayed within 24 hours of pesticide application stop time and collectively possess all information required by regulation of an ASID (application-specific information display).

On August 3, 2017, at 1535 hours, I spoke by telephone with M. TITTLE who (1) confirmed pesticide handler training information for Garrett Farms employees previously submitted is complete, (2) annotated pesticide use written recommendations serve as Garrett Farms ASID, and (3) Garrett Farms PURs for June 2017 will be provided as soon as possible.

On August 4, 2017, at 0903 hours, I received an e-mail from M. TITTLE that included annotated pesticide use written recommendations and PURs for all pesticide applications made to Garrett Farms site 1A Nugent Ranch in June 2017. Annotated recommendations indicate pesticide Pristine Fungicide was applied to said ranch on June 8 and 9, 2017, and both Pristine Fungicide and Rally 40WSP were applied on June 29, 2017. The PUR received for the June 29, 2017, pesticide application was incorrectly dated June 28, 2017. Aforesaid documents comprise Attachment 25.

On this same date, at 1350 hours, an e-mail was sent to M. TITTLE informing him the PUR received for the Garrett Farms site 1A Nugent Ranch June 29, 2017, pesticide application was incorrectly dated June 28, 2017. In this same e-mail I requested M. TITTLE provide me with a PUR with the correct application date of June 29, 2017. Subsequent to this request M. TITTLE provided a revised PUR for the June 29, 2017, application. This revised PUR included previously omitted spray adjuvant Widespread Max, yet was dated July 29, 2017 (Attachment 25). Further, CalAgPermits pesticide use information for Garrett Farms site 1A Nugent Ranch indicates only one pesticide application was made in June 2017, i.e., Pristine Fungicide and two other pesticides on June 9 (Attachment 25). However, information received from M. TITTLE indicates applications to said site occurred on June 8, 9 and 29, 2017. Failure to submit a PUR for a pesticide application is a violation of 3 CCR 6626(a), Attachment 2.

On this same date, A. VINUELA performed field worker safety inspections on both FMG Farm Contractor, Inc. and on Los Amigos Harvesting (inspection #103-44-17-M002-013 and #103-44-17-M002-014, respectively), Attachment 9 and 10, respectively. No regulatory violations were observed in either inspection.

On August 8, 2017, at 1524 hours, an e-mail was received from the CDFA Center for Analytical Chemistry-Residue that included Investigative Sample Analysis Report forms and corresponding

laboratory test results (Attachment 15) for the six raspberry plant foliar samples submitted for analysis on July 5, 2017. All six samples were tested for the presence of the active ingredients (a.i.'s) in pesticides Pristine Fungicide (a.i. boscalid and pyraclostrobin) and Rally 40WSP (a.i. myclobutanil). Pristine Fungicide and Rally 40WSP were two of the four pesticides applied by Garrett Farms to their site 1A on the morning of June 29, 2017. Test results indicate the presence of both aforesaid pesticides (i.e., their a.i.'s) in all six samples. Sample test results appear below.

| | | Rally 40WSP | Pristine Fungicide | |
|---|---|---|---|---|
| Sample # | Sample I.D. # | Myclobutanil (ppm) | Pyraclostrobin (ppm) | Boscalid (ppm) |
| 1 | GF-1-SC | 3.1 | 4.0 | 33.5 |
| 2 | GF-2-SC | 1.2 | 1.3 | 12.6 |
| 3 | GF-3-SC | 1.1 | 1.1 | 9.7 |
| 4 | GF-4-SC | 1.7 | 2.2 | 12.0 |
| 5 | GF-5-SC | 4.8 | 12.2 | 28.0 |
| 6 | GF-6-SC | 0.79 | 1.2 | 12.2 |

After review of referenced Investigative Sample Analysis Report forms, D. SANFORD contacted Louie Guerra, Senior Environmental Scientist (Supervisory), DPR Central Regional Office, regarding corrections made to the test result entries on referenced forms (Attachment 15).

On August 16, 2017, at 1656 hours, D. SANFORD received an e-mail from L. GUERRA indicating the CDFA laboratory's original sample analysis test results were calculated using an incorrect dilution factor. Said error was discovered and pesticide residue level values were recalculated and corrected on the Investigative Sample Analysis Report forms (Attachment 15). In further regard to information on said forms, samples GF-1-SC thru and including GF-5-SC were placed in the CAC refrigerator for storage at 1850 hours (not the time indicated on referenced form), and sample GF-6-SC was placed in the CAC refrigerator on 7-1-18 at 0955 hours.

On September 12, 2017, at 1530 hours, I contacted Los Amigos Harvesting by telephone and spoke with Office Manager Patty Garrett. I informed P. GARRETT that when interviewed, J. RESENDIZ stated he was an employee of Los Amigos Harvesting, whereas M. GALVAN stated he was an employee of Garrett Farms. P. GARRETT informed me M. GALVAN, J. RESENDIZ and M. TITTLE were Los Amigos Harvesting employees. I informed P. GARRETT (1) employers of pesticide handlers must maintain a copy of their written training program and corresponding training records pursuant to 3 CCR 6724 (a) and (e) respectively (Attachment 2), and (2) I already obtained referenced information related to J. RESENDIZ and M. GALVAN from Garrett Farms Authorized Representative M. TITTLE. I informed P. GARRETT I would forward to her said information obtained from M. TITTLE and asked that she state it is complete or provide any missing information.

On this same date, at 1617 hours, I e-mailed to P. GARRETT the employee handler training program and records for J. RESENDIZ and M. GALVAN that I received from M. TITTLE (Attachment 12). (M. TITTLE possesses a valid Private Applicator Certificate and is therefore considered trained to handle pesticides per 3 CCR 6724(d), Attachment 2.)

On September 14, 2017, at 1621 hours, I sent an e-mail to P. GARRETT and asked (1) if Los Amigos Harvesting possessed a Pest Control Business Licensed issued by DPR, (2) who pays the salary and workers compensation insurance for employees M. TITTLE, J. RESENDIZ and M. GALVAN, and (3) who supervises and directs the work activities of said employees.

On September 20, 2017, at 1010 hours, I received a telephone voice mail message from S. GARRETT requesting I contact him. An hour later I spoke by telephone with S. GARRETT who indicated the information requested from Los Amigos Harvesting in my e-mails dated September 12 and 14, 2017, would be provided as soon as possible. S. GARRETT also requested I obtain a statement from an individual who reportedly possessed information pertinent to the present investigation. I informed S. GARRETT said individual would be interviewed.

On October 2, 2017, at 1300 hours, S. GARRETT visited the CAC office and provided the handler training program and training records related to Los Amigos Harvesting employee handlers J. RESENDIZ and M. GALVAN (Attachment 13), and responded to my earlier questions regarding remuneration and supervision of said employees. Training program and records provided include one document entitled Written Training Program, two documents entitled Training Log (one with a date and one without a date), a Pesticide Handler/Applicator Training Program form for J. RESENDIZ and the same for M. GALVAN, photocopies of training certificates/cards for both men and a copy of DPR's *Pesticide Safety Information Series* (PSIS) leaflet A-8 and leaflet A-9 (both leaflets in English). Aforesaid program and records satisfy all applicable requirements set forth in 3 CCR 6724 (Attachment 2) with one exception: spray adjuvant Widespread Max (CA Reg. No. 34704-50061) that was applied by referenced employee handlers on June 29, 2017, is not listed among the pesticides for which training was provided. (The definition of "pesticide" in FAC 12753, Attachment 3, includes any spray adjuvant.) Regarding supervision, S. GARRETT is permittee/operator of the property for Garrett Farms' California restricted material permit #44-17-440168A (Attachment 5). Pursuant to 3 CCR 6420(a), Attachment 2, S. GARRETT provided the CAC written documentation designating M. TITTLE as his authorized representative and, as such, was authorized to act on behalf of S. GARRETT. M. TITTLE is the supervisor of both J. RESENDIZ and M. GALVAN. Further, Los Amigos Harvesting remunerates and maintains workers compensation insurance for all three employees (i.e., M. TITTLE, J. RESENDIZ and M. GALVAN). Regarding possession of a DPR Pest Control Business License required by FAC, section 11701 (Attachment 3), to advertise, solicit or operate a pest control business, i.e., perform pest control for hire, S. GARRETT and P. GARRETT (the latter in an earlier telephone conversation) stated Los Amigos Harvesting does not possess said license. The DPR database of individual/personal and business licensees does not include Los Amigos Harvesting as a Pest Control Business.

On October 6, 2017, at 1135 hours, A. VINUELA, speaking in Spanish, interviewed in person the individual S. GARRETT requested (on September 20, 2017) be interviewed regarding the purported pesticide exposure incident on June 29, 2017. At the outset of said interview referenced individual requested their identity remain anonymous. In response to A. VINUELA's questions, referenced individual stated the following in summary.

> I was at the Coastal Berry - North Bronson ranch on June 29th around 8:00 a.m. towing some heavy machinery with a tractor. I was at the north end of the lot where the harvesting crew was working and heading southbound on the service road. I was traveling slowly behind a pesticide application spray rig when the driver of the rig stopped and spoke to the harvesting crew. He then went approximately 15 rows into the caneberry field

and started the application. I did not smell or see any pesticides in the air. I saw the harvesting crew move to the west side of the field. After a while I saw the first responders come to the field. I do not think the pesticide application drifted upon the harvesting crew. Maybe they experienced an odor, but not pesticide drift. In my opinion, the applicator started spraying a reasonable distance away from the fieldworkers.

On October 27, 2017, at 1420 hours, I spoke by telephone with F. LEON regarding proper identification of an employee's employer. F. LEON provided referral to Guidelines for Interpreting Pesticide Laws, Regulations, and Labeling, Employer Identification, *Pesticide Use Enforcement Program Standards Compendium*, Volume 8, DPR (Attachment 23), and Determining When a Pest Control Business License is Required by a Farm Labor Contractor, PML 01-12 (Attachment 8).

On October 31, 2017, at 1520 hours, I spoke by telephone with M. TITTLE who stated no one "on-site" at Los Amigos Harvesting provided primary direction and control over the pest control work he, J. RESENDIZ and/or M. GALVAN performed. M. TITTLE indicated that he as the Authorized Representative of Garrett Farms directed and controlled pest control work performed at Garrett Farms.

On November 1, 2017, at 1332 hours, an e-mail was sent to P. GARRETT of Los Amigos Harvesting requesting additional information regarding primary direction and control of pest control work perform by Los Amigos Harvesting employees M. TITTLE, J. RESENDIZ and M. GALVAN.

On November 2, 2017, at 1550 hours, I received a telephone call from S. GARRETT requesting I meet with him at Garrett Farms site 1A Nugent Ranch to witness a simulated pesticide application using the same equipment and application parameters as that used on the morning of June 29, 2017, during the purported pesticide exposure incident. I informed S. GARRETT I already obtained from M. TITTLE requisite information regarding the June 29, 2017, pesticide application, yet would meet with him to witness said simulation. A meeting was scheduled for November 9, 2017, at 0900 hours. Further, S. GARRETT indicated he would at said meeting provide the information requested in my November 1, 2017, e-mail to Los Amigos Harvesting regarding primary direction and control of pest control work perform by Los Amigos Harvesting employees.

On November 9, 2017, at approximately 0830 hours, I received a telephone call from S. GARRETT suggesting our meeting scheduled for this same date be cancelled due to inclement weather. The meeting was rescheduled for November 14, 2017, at 0900 hours.

On this same date, at 1256 hours, an e-mail was sent to P. GARRETT of Los Amigos Harvesting requesting additional information including who provided primary direction and control of pest control work perform by their employees, and in what capacity did this individual serve Los Amigos Harvesting.

On November 14, 2017, at approximately 0830 hours, I received a telephone call from S. GARRETT who stated he was unable to attend our scheduled meeting and suggested I meet with a member of his staff to observe aforementioned simulated pesticide application. I declined the meeting and reiterated my observation of a simulated application was unnecessary, for I already possessed requisite information regarding the June 29, 2017, pesticide application at Garrett Farms

site 1A Nugent Ranch. When asked to provide the information previously requested of Los Amigos Harvesting regarding primary direction and control of pest control work perform by Los Amigos Harvesting employees, my call was transferred to P. GARRETT. P. GARRETT stated referenced information was forthcoming.

On November 14, 2017, at 0936 hours, D. SANFORD and I received an e-mail from Mr. Anthony Oceguera, Attorney at Law, indicating (1) his office was assisting S. GARRETT and Garrett Farms with the ongoing investigation of a possible pesticide exposure incident, and (2) answers to the aforementioned questions (i.e., primary direction and control of pest control work perform by Los Amigos Harvesting employees) posed to P. GARRETT of Los Amigos Harvesting were forthcoming.

On December 15, 2017, at 1611 hours, an e-mail was received from A. OCEGUERA (Attachment 7) providing responses to questions posed to farm labor contractor Los Amigos Harvesting in my November 1, 2017, e-mail regarding primary direction, control and supervision of their employees when performing pest control work for Garrett Farms. A. OCEGUERA's statements are summarized as follows.

> Los Amigos Harvesting, pursuant to a Farm Labor Contractor Services Agreement, provides services to Garrett Farms that include hiring, supervision and management of laborers to conduct operations including all necessary pest control services. Under said agreement Los Amigos Harvesting is solely responsible for the primary direction, control and supervision of Los Amigos Harvesting employees Mr. Tittle, Mr. Resendiz and Mr. Galvan. Mr. Tittle, as the foreman, had the authority and discretion to manage his crews, which included employees Mr. Resendiz and Mr. Galvan. Nobody provided primary direction, control and supervision of Mr. Tittle, however he did generally report to Los Amigos Harvesting ownership. Referenced agreement further states Garrett Farms has no right to direct or control Los Amigos Harvesting employees.

Title 3 of California Code of Regulations, section 6000 (Attachment 2), states ""Employer" means any person who exercises primary direction and control over the work, services, or activities of an employee. A foreman, crew leader, supervisor, or similarly situated person represents the employer when hiring an employee or when exercising, or having responsibility for exercising, the primary direction and control, but is not considered the employer himself or herself." Further, DPR's *Pesticide Use Enforcement Program Standards Compendium*, Volume 8, Section 6.7 - Employer Identification (Attachment 23) holds that a duality of employers may exist where a primary (or general) employer supplies the contract employee for a fee and a secondary (or special) employer provides the workplace and controls how the work is to be done, directs what work is to be done or supervises the work activities of the contract employee. Food and Agricultural Code, section 11701 (Attachment 3), states "It is unlawful for a person to advertise, solicit, or operate as a pest control business, unless the person has a valid pest control business licensed issued by the director [of DPR]." However, a duly licensed farm labor contractor (FLC) may provide a grower with a contract employee to perform pest control work, so long as said employee is properly trained pursuant to 3 CCR 6724 (Attachment 2). The Department of Pesticide Regulation's PML 01-12 (Farm Labor Contractor - Determining When a Pest Control Business License is Required by a Farm Labor Contractor, Attachment 8) indicates an FLC must possess a pest control business licenses (PCB) before providing to a client employees that perform pest control under the primary direction and control of that FLC. Conversely, if the FLC provides

to a client employees that perform pest control under the primary direction and control of the client, DPR does not require the FLC to possess a valid PCB license.

Recommendation #6649 for the Garrett Farms June 29, 2017, pesticide application received from M. TITTLE was written by Pest Control Advisor (PCA) Daniel Schmida. D. SCHMIDA has valid PCA licensed #71094 (categories A, B, C and E) issued by DPR with expiration date December 31, 2017. D. SCHMIDA is registered as a PCA with the Santa Cruz County CAC for year 2017. Said recommendation (Attachment 28) includes all information required in a Written Recommendation pursuant to FAC 12003 and 3 CCR 6556 (Attachments 3 and 2, respectively). Said recommendation was for the following pesticide use.

- DiPel DF – EPA Reg. No. 73049-39, a.i., *Bacillus thuringiensis* 54%, signal word Caution, application rate 2 pounds/acre, 4 hour REI (Attachment 16).
- Pristine Fungicide – EPA Reg. No. 7969-199, a.i., pyraclostrobin 12.8% and boscalid 25.2%, signal word Caution, application rate 18.5 ounces/acre, 12 hour REI (Attachment 17).
- Rally 40WSP – EPA Reg. No. 62719-410, a.i., myclobutanil 40%, signal word Caution, application rate 2.5 ounces/acre, 24 hour REI (Attachment 18).
- Widespread Max – CA Reg. No. 34704-50061, a.i., polyether-polymethylsiloxane-copolymer polyether 100%, signal word Warning, application rate 6 fluid ounces/acre, REI not specified (Attachment 19).

Registered use and application rates recorded on aforesaid recommendation are consistent with pesticide label requirements.

Weather conditions reported hourly on June 29, 2017, by the California Irrigation Management Information System (CIMIS) Green Valley Road station #111 (Attachment 32) during the time of the purported pesticide exposure incident are summarized as follows:

| Time | Wind Direction | Wind Speed |
|---|---|---|
| 7:00 a.m. | 255° (W/SW) | 2.4 mph |
| 8:00 a.m. | 329° (N/NW) | 3.1 mph |
| 9:00 a.m. | 297° (W/NW) | 2.8 mph |

Garrett Farms employee pesticide handler M. GALVAN stated he started the application on June 29, 2017, sometime between 7:30 a.m. and 8:00 a.m., and stopped the application approximately 20 minutes later. Wind speed reported by CIMIS was 2.4 mph from the west/southwest at 7:00 a.m., increased to 3.1 mph from the north/northwest at 8:00 a.m., and was 2.8 mph from the west/northwest at 9:00 a.m. (Wind direction is reported as the direction from which the wind originates, e.g., "west" denotes winds blowing from west to east.) Aforesaid weather station is located approximately 1.1 miles northwest of the purported pesticide exposure site.

## Findings

On the morning of June 29, 2017, fifteen out of 24 FMG Farm Contractor employees harvesting raspberries at Coastal Berry - North site 21A Bronson Ranch experienced physical symptoms indicative of chemical exposure. Eight of the employees received professional medical care for

their physical symptoms. Physical symptoms reported by these eight employees and corroborated by medical personnel were consistent with those listed on registered labels and/or safety data sheets (SDS) for pesticides DiPel DF, Pristine Fungicide, Rally 40WSP, and Widespread Max (Attachment 31). Hospital medical records for referenced employees state the diagnosis as pesticide Pristine Fungicide exposure or chemical exposure. Five FMG employees reported their physical symptoms to the crew foreman, but were not immediately taken to a physician.

Various documents and eyewitness statements indicate farm labor contractor Los Amigos Harvesting applied pesticides DiPel DF, Pristine Fungicide, Rally 40WSP and Widespread Max to Garrett Farms site 1A Nugent Ranch at approximately 0800 hours on June 29, 2017, while FMG employees were working in neighboring Coastal Berry - North site 21A Bronson Ranch. Conflicting evidence exists regarding the distance between where the pesticides were applied and where the FMG employees were working. Of the FMG employees that saw the pesticide application all stated it began along the first row of plants on Garrett Farms site 1A Nugent Ranch immediately across the service road from where they were working or no more than approximately 100 feet away. M. GALVAN stated he started the application 12 rows (i.e., approximately 87 feet) into the field and from there proceeded row by row eastward into an area reportedly already treated with pesticides. J. RESENDIZ, stated the pesticide application began approximately 12 to 15 rows into the field, but from there proceeded westward toward FMG employees. Both M. GALVAN and J. RESENDIZ stated there was no wind when the pesticide application started. The California Irrigation Management Information System reports wind speed during the approximate time of pesticide application was 2.4 to 3.1 mph with wind direction ranging between north/northwest to west/southwest.

M. TITTLE of Los Amigos Harvesting stated (1) a Gearmore P42N1-400G with spray nozzles ranging in height from ground level to approximately five feet was used to make the pesticide application at Garrett Farms site 1A the morning of June 29, 2017, and (2) the resultant spray droplet size was "very fine" pursuant to the American Society of Agricultural and Biological Engineers S572.1 standard (Attachment 1). Said standard indicates a "very fine" droplet size has a "high" potential for drift, i.e., off site movement. Appreciating the spray nozzles were directed perpendicularly out from the spray rig, and said rig applied pesticide along raspberry rows running parallel to the service road separating Garrett Farms site 1A and neighboring Coastal Berry - North site 21A, pesticide spray was directed toward nearby FMG employees.

Interviews were conducted with 23 of the 24 FMG Farm Contractor employees that were working at Coastal Berry - North site 21A Bronson Ranch during the pesticide exposure incident. All eight of the employees that received professional medical care for pesticide exposure reported seeing the pesticide application mist and experienced a strong/bad odor. One of these employees reported pesticide contaminating her skin and clothes and saw the surface of the harvesting trailer's table top wet with pesticide. Of the remaining 15 employees, eight reported seeing the pesticide application mist and five experienced a strong/bad odor. Once FMG employees started exhibiting symptoms of pesticide exposure, their supervisor ordered them out of the area. M. GALVAN stated he spoke with FMG employees prior to his application of pesticides and asked (1) how long they would be in the area, and (2) that they signal to him if they experienced any pesticide odor. M. Galvan's foregoing statements were corroborated by FMG employees. Dole Fresh Foods Caneberry Manager Freddie Yanez ordered the picked fruit on the harvesting trailer's table be destroyed due to possible pesticide contamination.

The PUR received from M. TITTLE that he stated was for the pesticide application made to Garrett Farms site 1A Nugent Ranch on June 29, 2017, possesses an incorrect application date. When questioned regarding said PUR's erroneous date, Los Amigos Harvesting failed to comment. However, the annotated pesticide recommendation received for said application indicates pesticides DiPel DF, Pristine Fungicide, Rally 40WSP, and Widespread Max were applied to said site on June 29, 2017, from 7:00 a.m. to 8:30 a.m. and again later that same day from 4:00 p.m. to 6:00 p.m. Further, CalAgPermits pesticide use information for Garrett Farms site 1A Nugent Ranch indicates only one pesticide application was made in June 2017, i.e., Pristine Fungicide (and two other pesticides) on June 9. However, information received from M. TITTLE indicates applications to said site occurred on June 8, 9 and 29, 2017.

Raspberry plant foliar samples collected at Coastal Berry - North site 21A Bronson Ranch and Garrett Farms site 1A Nugent Ranch on June 29, 2017, were analyzed for the presence of Pristine Fungicide and Rally 40WSP; two of the four pesticides applied at Garrett Farms site 1A Nugent

Ranch on the morning of the June 29, 2017, purported pesticide exposure incident. Referenced samples tested positive for the presence of Pristine Fungicide and Rally 40WSP. Available evidence indicates said pesticides were also applied by Coastal Berry - North to their site 21A Bronson Ranch during the month of June, but not to block #7 where the FMG employees were working the morning of the June 29, 2017, purported pesticide exposure incident.

M. GALVAN made the pesticide application to Garrett Farms site 1A Nugent Ranch on the morning of the June 29, 2017, purported pesticide exposure incident and was an employee under the primary direction and control of farm labor contractor Los Amigos Harvesting. Department of Pesticide Regulation records and P. GARRETT both indicate Los Amigos Harvesting did not possess a valid Pest Control Business (PCB) license that is required of a farm labor contractor (FLC) before providing to a client (i.e., Garrett Farms) employees that perform pest control under the primary direction and control of that FLC. Further, said company (1) operated as a pest control business in Santa Cruz County without first registering as such with the Santa Cruz CAC, and (2) failed to submit pesticide use reports to the CAC within seven days of completion of pesticide applications.

Los Amigos Harvesting employees J. RESENDIZ and O. ORTIZ saw Coastal Berry - North pesticide application tractors at their site 21A Bronson Ranch. One of the sightings was at 8:00 p.m. the night before the exposure incident and the other on the morning of the exposure incident. Said tractors were either sitting idle, being washed or driven in the vicinity of the incident. None of the tractors were observed making a pesticide application. O. ORTIZ also observed pesticide applications signs posted at referenced site. Title 3 CCR 6776(c), Attachment 2, allows pesticide application signs to be posted up to 24 hours prior to a pesticide application and may remain posted at an application site for three days after the end of the application restricted entry interval.

Employee pesticide handler training records regarding M. GALVAN and J. RESENDIZ submitted by their employer Los Amigos Harvesting lacked information required by California Code of Regulations, i.e., spray adjuvant Widespread Max was not listed as a pesticide for which training was provided.

The Coastal Berry - North application-specific information display forms for June, 2017, were lacking information required by regulation, i.e., June 23 and 25, 2017, pesticide applications to site 21A Bronson Ranch and a June 28 application of Pristine Fungicide to block #8 of said ranch.

Additionally, Coastal Berry - North written recommendations indicate pesticide applications were made to referenced ranch on June 3 and 27, 2017, yet these applications were not reported as required by regulation and do not appear in CalAgPermits pesticide use records.

Fieldworker safety training records submitted by FMG Farm Contractor, Inc. for their employees working at Coastal Berry - North site 1A Bronson Ranch on the morning of June 29, 2017, indicate only 14 of the 24 employees received requisite field worker safety training within the past year before beginning work in a treated field. However, when interviewed, 22 of the 24 employees stated they had received fieldworker safety training within the past year. This discrepancy may be due in part to a lack of specificity in the question posed to employees during the interview and employees conflating fieldworker safety training pursuant to 3 CCR 6764 with other training provided by said employer (e.g., drug use in the workplace, heat stress). Referenced records indicate employees [redacted] and C. CAMARILLO did not receive fieldworker safety training from FMG Farm Contractor, Inc. and both employees stated they had not received fieldworker safety training within the past year as required by regulation. Referenced employer's safety training records lacked information required by Title 3 of California Code of Regulations, i.e., titles and sources of training materials and trainer's name and qualifications.

## Conclusions

Coastal Berry - North failed to submit a PUR for pesticide applications made to their site 21A Bronson Ranch on June 3 and June 27, 2017, and thereby violated 3 CCR 6626(a) that states:

> *(a) The operator of the property which is producing an agricultural commodity shall report the use of pesticides applied to the crop, commodity, or site to the commissioner of the county in which the pest control was performed. This report must be submitted by the 10th day of the month following the month in which the work was performed. This report is not required if the pesticide use is reported to the commissioner by pest control business as specified in subsection (b); however, the operator of the property treated, shall retain a copy of the business' "Report by Site" for two years.*

Coastal Berry - North failed to include requisite information regarding their pesticide applications made to their site 21A Bronson Ranch on June 23, 25 and 28, 2017, in their application-specific information display for June 2017, and thereby violated 3 CCR 6723.1(a) and (b) that state:

> *(a) The operator of property used for the commercial or research production of an agricultural plant commodity shall display, at a central location, the following application-specific information while employees are employed to handle pesticides:*
> *(1) The crop or site treated and identification of the treated area;*
> *(2) The date(s) and time(s) the application started and ended;*
> *(3) Restricted entry interval;*
> *(4) Product name, U.S. EPA registration number, and active ingredients; and*
> *(5) A copy of the Safety Data Sheet(s) for the applied pesticide(s).*
> *(b) The information shall be displayed within 24 hours of the completion of an application and include all applications that have been made to any treated field on the agricultural establishment within 1/4 mile of where employees will be working. Once displayed, the information shall remain displayed until the area no longer meets the definition of a*

*treated field or handler employees will no longer be on the establishment, whichever occurs earlier.*

FMG Farm Contractor, Inc. training records indicate 14 of the 24 employees working at Coastal Berry - North site 21A Bronson Ranch the morning of the pesticide exposure incident received fieldworker safety training from said employer. Of the remaining ten employees, eight may or may not have received requisite training within the past year from an employer other than FMG Farm Contractor, Inc., and two did not receive said training within the past year which is a violation of 3 CCR 6764(a) and (b) that state:

*(a) The employer shall assure that each employee assigned to work in a treated field has been trained within the last 12 months, in a manner the employee understands, before beginning work in the treated field.*
*(b) The training shall include the following information:*
*(1) Importance of routine decontamination and washing thoroughly after the exposure period;*
*(2) Restricted entry intervals and what posting means, including both California and federal field posting sign formats;*
*(3) Where pesticides are encountered, including treated surfaces in the field, residues on clothing, chemigation and drift;*
*(4) Routes of exposure;*
*(5) The hazards of pesticides, including acute effects, chronic and delayed effects, and sensitization effects;*
*(6) Common signs and symptoms of overexposure;*
*(7) First aid including decontamination, eye flushing, and obtaining emergency medical care;*
*(8) Warnings about taking pesticides or pesticide containers home;*
*(9) Prevention, recognition, and first aid for heat-related illness in accordance with Title 8 of the California Code of Regulations, section 3395;*
*(10) The hazard communication program requirements of section 6761; and*
*(11) Employee rights, including the right:*
*(A) To personally receive information about pesticides to which he or she may be exposed;*
*(B) For his or her physician or employee representative to receive information about pesticides to which he or she may be exposed; and*
*(C) To be protected against retaliatory action due to the exercise of any of his or her rights.*

FMG Farm Contractor, Inc. failed to include requisite information in their fieldworker training records and thereby violated 3 CCR 6764(e) that states:

*(e) The record of initial and annually required training given to the employee must include the date; employee's printed name and signature; the title(s) and source(s) of the training materials used; employer's name; and trainer's name and qualifications as specified in (f). This record shall be retained by the employer for two years at a central location at the workplace accessible to employees. The record must be provided to the employee upon request.*

FMG Farm Contractor, Inc. failed to ensure five employees who reported pesticide exposure related physical symptoms to the crew foreman were taken to a physician and thereby violated 3 CCR 6766(c) that states:

> *(c) When there are reasonable grounds to suspect that an employee has a pesticide illness, or when an exposure to a pesticide has occurred that might reasonably be expected to lead to an employee's illness, the employer shall ensure that the employee is taken to a physician immediately.*

Investigative findings indicate 15 of the 24 FMG Farm Contractor, Inc. employees working at Coastal Berry - North site 1A Bronson Ranch on the morning of June 29, 2017, experienced physical symptoms as a result of exposure to pesticides applied on neighboring Garrett Farms site 1A Nugent Ranch by farm labor contractor Los Amigos Harvesting. Eight of these 15 employees received professional medical care for their symptoms. Los Amigos Harvesting failed to perform pest control in a careful and effective manner and thereby violated 3 CCR 6600(b) and (e) that state:

> *(b) Perform all pest control in a careful and effective manner.*
> *(e) Exercise reasonable precautions to avoid contamination of the environment.*

The pesticide application made by Los Amigos Harvesting to Garrett Farms site 1A Nugent Ranch on the morning of June 29, 2017, posed a reasonable possibility of (1) contaminating the bodies or clothing of nearby FMG employees; (2) contaminating private property or nontarget crops (i.e., Coastal Berry - North site 21A Bronson Ranch and crops therein); and (3) creation of a health hazard causing the illness of FMG employees and preventing normal use of said property (i.e., harvest and sale of fruit therein). Los Amigos Harvesting thereby violated 3 CCR 6614 that states:

> *(a) An applicator prior to and while applying a pesticide shall evaluate the equipment to be used, meteorological conditions, the property to be treated, and surrounding properties to determine the likelihood of harm or damage.*
> *(b) Notwithstanding that substantial drift would be prevented, no pesticide application shall be made or continued when:*
> *(1) There is a reasonable possibility of contamination of the bodies or clothing of persons not involved in the application process;*
> *(2) There is a reasonable possibility of damage to nontarget crops, animals, or other public or private property; or*
> *(3) There is a reasonable possibility of contamination of nontarget public or private property, including the creation of a health hazard, preventing normal use of such property. In determining a health hazard, the amount and toxicity of the pesticide, the type and uses of the property and related factors shall be considered.*

Los Amigos Harvesting failed to submit PURs for June 8 and 9, 2017, within seven days of completion of the pesticide application and thereby violated 3 CCR 6626(b) that states:

> *(b) An agricultural pest control business shall report the use of pesticides applied by it for the production of an agricultural commodity to the commissioner of the county in which the pest control was performed. This report must be submitted within seven days of completion of the pesticide application. A copy of the report shall be sent by the business*

*to the operator of the property where the pest control was done within 30 days of completion of the pesticide application.*

Los Amigos Harvesting failed to assure their employee pesticide handler M. GALVAN's compliance with laws and regulations (i.e., FAC 12973 and 3 CCR 6614) when performing pest control and thereby violated 3 CCR 6702(a) and (b)(3) and (5) that states:

*(a) The employer shall comply with each regulation in this subchapter which is applicable to the employer's action or conduct.*
*(b) The employer:*
*(3) shall assure safe work practices, including all applicable regulations and pesticide product labeling requirements, are complied with;*
*(5) shall assure that employees handle and use pesticides in accordance with the requirements of law, regulations, and pesticide product labeling requirements.*

Los Amigos Harvesting employee pesticide handler training records regarding M. GALVAN and J. RESENDIZ do not list spray adjuvant Widespread Max as a pesticide for which training was provided and thereby violated 3 CCR 6724(b) that states:

*The employer shall assure that employees who handle pesticides have been trained pursuant to the requirements of this section and that all other provisions of this section have been complied with for employees who handle pesticides.*
*(b) The training shall cover, for each pesticide or chemically similar group of pesticides, to be used:*

Los Amigos Harvesting provided primary direction and control over the pesticide use related work, services or activities of their employee pesticide handler M. GALVAN and was therefore operating a pest control business without first obtaining a valid pest control business license and thereby violated FAC 11701 that states:

*It is unlawful for a person to advertise, solicit, or operate as a pest control business, unless the person has a valid pest control business license issued by the director.*

Los Amigos Harvesting operated a pest control business in Santa Cruz County without first registering as such with the Santa Cruz CAC and thereby violated FAC 11732 that states:

*It is unlawful for any person to advertise, solicit, or operate as a pest control business in any county unless the person has registered with the commissioner for the current calendar year.*

Los Amigos Harvesting's use of pesticides DiPel DF, Pristine Fungicide and Rally 40 WSP was in conflict with the products' label statement "Do not apply this product in a way that will contact workers or other persons, either directly or through drift" and thereby violated FAC 12973 that states:

*The use of any pesticide shall not conflict with labeling registered pursuant to this chapter which is delivered with the pesticide or with any additional limitations applicable to the conditions of any permit issued by the director or commissioner.*

# ATTACHMENTS

1. ASABE S572.1 Droplet Size Calculation, American Society of Agricultural and Biological Engineers, Standard S572.1
2. California Code of Regulations, referenced sections
3. California Food and Agricultural Code, referenced sections
4. California Restricted Material Permit, #44-17-27P192A, Coastal Berry - North
5. California Restricted Material Permit, #44-17-440168A, Garrett Farms
6. Doctor's First Report of Occupational Injury or Illness (1 each) and Pesticide Incident Reports (6 each), alphabetical order
7. E-mail, The Saqui Law Group, December 15, 2017
8. *Farm Labor Contractor - Determining When a Pest Control Business License is Required by a Farm Labor Contractor*, PML 01-12, California Department of Pesticide Regulation
9. Field Worker Safety Inspection Report, #103-44-17-M002-013, FMG Farm Contractor, Inc.
10. Field Worker Safety Inspection Report, #103-44-17-M002-014, Los Amigos Harvesting
11. Field worker training records, FMG Farm Contractor, Inc.
12. Handler training program, Garrett Farms, employees Galvan, M. and Resendiz, J. (includes records)
13. Handler training program, Los Amigos Harvesting, employees Galvan, M. and Resendiz, J. (includes records)
14. Incident Report, Watsonville Fire Department, #2017-1001690 (includes Watsonville Fire Department document entitled Prehospital Care Report and memorandum requesting information)
15. Investigative Sample Analysis Report, samples #R17C00290, #R17C00291, #R17C00292, #R17C00293, #R17C00294, R17C000295 (includes sampling map)
16. Label, DiPel DF Biological Insecticide, EPA Reg. No. 73049-39, pages 1 and 2 of 2
17. Label, Pristine Fungicide, EPA Reg. No. 7969-199, pages 1-3, 9, 12 and 13 of 33
18. Label, Rally 40WSP, EPA Reg. No. 62719-410, pages 1-3, 5 and 27-31 of 80
19. Label, Widespread Max, CA Reg. No. 34704-5006I, pages 1, 2 and 3 of 3
20. List of Crew, FMG Farm Contractor, Inc., Coastal Berry - North Bronson Ranch site 21A, June 29, 2017 (includes annotated version of Personnel List)
21. Map, lot identification, Coastal Berry - North, Bronson Ranch, site 21A
22. Medical Records, seven total, alphabetical order (include Medical Information Authorization forms and faxes requesting information)
23. *Pesticide Use Enforcement Program Standards Compendium*, Volume 8, CDPR, Section 6.7 - Employer Identification, pages 6-16 to 6-19
24. Pesticide Use Reports, Coastal Berry - North, June 2017 (includes application-specific information and CalAgPermits database information)
25. Pesticide Use Reports, Garrett Farms, June 2017 (includes application-specific information and CalAgPermits database information)
26. Photographs, pesticide exposure incident site, June 29, 2017
27. Prehospital Care Reports, American Medical Response of Santa Cruz County, 5 each, alphabetical order (includes memorandum requesting information)
28. Recommendation, #6649, Daniel Schmida, PCA, Garrett Farms June 29, 2017 pesticide application (includes single page annotated version)
29. Registration, Farm Labor Contractor, Santa Cruz County, FMG Farm Contractor, Inc., License # FLC000185517, year 2017

30. Registration, Farm Labor Contractor, Santa Cruz County, Los Amigos Harvesting, License # FLC000234426, year 2017
31. Safety Data Sheets, pesticides DiPel DF Biological Insecticide (pages 1-3, 6 and 7 of 11), Pristine Fungicide (page 1-4 and 8 of 12), Rally 40WSP (pages 1-3, 8 and 10 of 14), Widespread Max (pages 1, 2 and 4 of 6), alphabetical order
32. Weather report, June 29, 2017, California Irrigation Management System

**Report submitted by,**

Shane DeVine
Agricultural Biologist III
April 26, 2018